How Do Networks Evolve Over Time?

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Abstract

Hides and skins have been a resource that has created a wide range of activities such as clothing and footwear of all types, saddlery and riding equipment, travel goods and upholstery were amongst many industries using leather. This dissertation uses historical documentation to investigate the interactions of a small UK company working mostly in the USA that had a pivotal role in the transformation of the network surrounding the production, distribution and use of leather in the late 19th century. As an extended historical analysis it offers a particularly wide perspective on the complex and continuing network outcomes of that networking and the innovations to which it leads. This historical research location also provides an opportunity to examine innovation within the context of network evolution over many decades.

There have been a number of attempts to describe and analyse networks and company positions in them and to help companies to manage or change their "network position" (Håkansson and Snehota 1995, Ford et. al. 2003, Håkansson et. al. 2009). But most of these have confined their attention to a particular point in time or have looked at network evolution over a restricted time period, such as Lundgren (1995) and Andersson (1996). What can happen within networks over time has been looked at in certain narrow ways in specific studies related to trust (Madhok 1995, Mouzas et. al. 2009), and interaction (Medlin 2004) but no examination has been made of full organisation life-cycle situations where the full implication of macro-environmental changes might be considered in terms of networks.

This dissertation is based on the idea that insights into the dynamics and evolution of networks and companies may be found by taking a longer term perspective; looking over many decades as opposed to just a few years. It uses historical documents and correspondence covering the period from 1860 until 1930 to examine the evolution of a network and of a single company within it.

Firms seek to differentiate themselves in a world of excess-capacity and wide customer choice. The single-company view of this seems to have been based on the assumption that it is possible for an individual company to "turn on" an innovation tap and change the direction of a business. More recently, the interconnections between business actors, their activities and resources and the complexity of the innovation process have been emphasised. For example, Dosi (1988) discussed the effects on innovation of complex intersectional linkages and Lundgren (1995) and Håkansson and Waluszewski (2002) highlight how difficult it is to predict the outcomes of any

attempt at innovation because of the limitations of actors' view of the network otherwise termed as "network pictures" (Ford et. al., 2003, p. 176) in a business landscape characterised by interdependency, variety and motion (Håkansson et. al. 2009).

A common assumption across all examinations of business relationships is they do not remain static but change over time. A major tenet of network theory is that any dyadic relationship not only involves the actions of the two partners but necessitates an ability to adjust to activities involving other related companies. As a consequence the nature of the relationship between companies changes, most commonly in small imperceptible increments, over time and the total business environment is likely to be quite transformed if looked at after a period. That is to say business networks are structures subject to a continuous organising process (Håkansson et. al. 2009)

The dissertation establishes the value of using network pictures to trace longitudinally the development of the "whole" network, and to relate network pictures to the study of evolution and dynamics in business networks. It shows that retrospective research approaches can be useful to study network processes and over large windows in time and can be valuable in helping to identify the emergence of temporal patterns and to highlight substantial changes in the network. The dissertation highlights the fact that networks and networking are not modern inventions, but are intrinsic to the nature of business activity. The case study also provides illustration of a number of network phenomena, such as network position, networking and the paradoxes that are endemic in networks.

As such the dissertation helps towards understanding the value of networks as processes. Networks are seen as continuously changing interactions carried out by individuals as part of the companies they work with. The dissertation identifies concepts such as "randomness as a strategy", "networking to access resources" and "the value of the non-transactional dyad" (where companies maintain a business relationship but are not necessarily continuously trading) as important for a company wanting to be able to respond to an ever-changing business environment.

Finally, the dissertation concludes with some lessons that may be drawn from the case for successful management in a network.

These include:
1. Implications for working within networks
2. Choices for companies between creating new networks or consolidating existing ones
3. Choices related to using the company's strengths to force a conclusion or concede to the wisdom of other actors

4. The value of maintaining many flexible relationships
5. The benefits from constantly looking at the wider picture in network terms
6. The value of understanding the dynamics of networks when it comes to innovation

The final of these contributions has just been published in The Journal of Customer Behaviour as “The role of a single actor in technical innovation and network evolution” based on selected parts of this dissertation.

Contents

1.0 Context and Purpose

The leather industry in both the UK and the US was, until the 1950s, one of the key strategic industries and it was in the top three in terms of turnover and employment well into the early years of the twentieth century. Hides and skins have been a resource that has created a wide range of activities. Clothing and footwear of all types, saddlery and riding equipment, travel goods and upholstery were amongst many industries using leather. This dissertation uses historical documentation to investigate the interactions of a small UK company working mostly in the USA that had a pivotal role in the transformation of the network surrounding the production, distribution and use of leather[1] in the late 19th century. This extended historical analysis offers a wider perspective on the complex and continuing network outcomes of that networking and the innovations to which it leads. This historical research location also provides an opportunity to examine innovation within the context of network evolution over nearly a century.

The industry case study used is based around the Liverpool leather company Booths and the global networks of which the company was a part. Booths were in business in Liverpool as international importers and traders from the late 18th century but in the 1860s entered a new business era. The business thrived until the mid 20th century but was taken over in the 1970's and largely closed down over the subsequent two decades. Only very small parts have survived into the 21st century.

The dissertation is embedded in the area of the rapidly growing body of work related to the IMP Group. As business becomes increasingly global and complex understanding business in network terms is being accepted as increasingly valuable.

[1] Hereafter referred to as the Leather Network.

It has been suggested (Ford et. al. 2011) that the process of managing in business networks can usefully be examined using three variables: the network pictures of participants; their purposeful networking and the outcomes of that networking. An actor's view of the network is a "network picture" (Ford et. al., 2003, p.176) and estimating network pictures for different actors gives a means to look at the interactions and relationships the actors consider important. Clearly the outcomes of networking will be viewed differently by each of the participants and these views will change over time. Further, perceived network outcomes will affect the network pictures of all actors, their view of their own position in the network and their approach to networking. The concept of network position refers to the unique point in network space that an actor occupies at a particular point in time. Network space is multidimensional and, among other aspects, may be expressed in terms of a physical, a relational and a technological dimension (Håkansson et. al., 2009). Finally, network pictures will affect individual actors' views of what is appropriate networking for themselves and for others and their view of network outcomes.

For this dissertation on business networks we start with two questions:

1. The first asks whether it is useful to look at longer-term business evolution in network terms from a historic viewpoint and the second how do these networks evolve? The dissertation seeks to show how insights into the development of a single business can be obtained by examining the interplay between the business and the evolving network of which it forms part.

2. The dissertation also contributes towards understanding the value of networks as processes for management, as well as filling a gap in

the academic literature in the study of the long term outcomes of networks.

The research aims to estimate the relationships between and amongst the actors and the network pictures held by the actors. Many questions come from within and without the networks. What creates reasons for a business to initiate changes in its relationships? Is it only in the hope of defending or improving its business position? How do "events" such as a major technological or economic change find their way into the network and lead to changes? All external phenomena are mediated by relationships and the structure of interdependencies within them. Hence it is logical to consider that external phenomena are effectively network or relationship phenomena. It is therefore not enough just to describe phenomena and put a time line on them to suggest links between phenomena and actors. This research will try and go deeper by using network pictures drawn or estimated from the perceptions of actors.

Business development has been studied in many ways which mostly support or strongly imply the existence of networks. Yet we are missing specific long term studies from an interactive network perspective. Many of the outcomes of network theory come from studies over three, five and ten year periods. Given the very long periods that can be required for some events, in particular innovation, to play out it becomes important to have this gap in the networks field of study filled.

Business histories, economic geography and economic history are mostly richly descriptive and can be used to draw on to estimate network pictures and to help identify when certain phenomena are occurring. Of themselves they do not offer the type of analysis which can come from the network approach but instead provide substantial amounts of information that makes it easier to consider the network

pictures of actors and the complex situations they might have been in during frenetic moments of networking. George and Bennett (2005) note that scholars in economics have become increasingly interested in using historical case studies and the logic of historical explanation.

The two questions of this dissertation as to whether it is useful to look at longer term business evolution in network terms from a historic viewpoint and the second on how these networks evolve in the long term fit well with the current state of the literature and the knowledge of the way networks evolve. The questions as to whether some of the tools of analysis and our understanding of networks from shorter periods of study are useful as the long term plays out should be a significant contribution. The approaches and insights should offer trustworthy outcomes which are transferable to other network situations.

When considering technology and innovation the elements of interactions and jointness of resources is an additional area that is not yet well explored despite the fact that we clearly see indications of unexpected outcomes of the innovative process which is by its nature highly unpredictable indicated by Håkansson and Waluszewski (2002). This means that a company is likely to find itself doing business with a variety of different products and even in different markets. It would appear likely that network theory could have a lot to contribute to understanding this process.

This leads to the conclusion that there is value in examining the life cycle of an innovation in network terms and in looking at the larger area of the evolution of networks over long periods of time.

At a time when interest in business networks is increasing the fact that so many key events and innovations need many decades to evolve and be properly understood heightens the need for a study covering a

long period of time. To be able to achieve such long term studies requires an historical method and a case which allows study to go beyond just looking at customers and suppliers involved in transactions.

This dissertation is laid out as follows. In Chapter 2 the literature related to the areas of IMP studies and networks is looked at along with the areas of strategic studies, economic geography and business histories. A section also looks at some aspects of technology studies.

Chapter 3 explains the research philosophy, the methodology and also looks at the choice of case study. In this chapter the analysis is explained along with the limitations involved in this work.

Chapter 4 covers the period from 1860 until 1930 in terms of four time limited episodes the first two by being way of preamble and the final two being the episodes of key focus for the dissertation.

Chapter 5 provides historical context for the leather industry in the 19th and early 20th century and specific examination of the group of companies that were in 1893 to form the United States Leather company which was to be the largest founding company in The Dow Jones Industrial Average when it was established in 1896. The United States Leather Company periods is analysed in some detail.

Chapter 6 offers an analysis of the episodes and the findings along with a discussion on the evolution of the Booth network from 1860 until 1930.

Chapter 7 is the conclusion and 8 the References.

In the Appendices there is a time line for the entire period. It extends until the group was taken over and largely closed down and has

associated with it details of the companies, senior family members, employees and other background information on the business.

2.0 Networks and Business Evolution

2.1 Introduction

Studies on networks and using network tools have greatly accelerated in recent years as the landscape of business has been seen to evolve. This section looks specifically at the relevance of the IMP approach, along with many specific aspects of the IMP approach. It then briefly examines the areas of strategy, business histories, economic geography and finally technology studies.

2.2 The increasing relevance of network approaches

Developments in technology and communications over the last twenty years have changed the business to consumer (B2C) scenario. Consumers now become involved in dialogues and complex interactions with companies even to the extent of co-creation of products. With the advent of experiential marketing (Prahalad and Ramaswamy, 2000) interpretive research and consumer culture theory (Arnould and Thomson, 2005) the stage has been reached that it is argued that there should be less distinction between business to business and business to consumer marketing. As Cova and Salle (2007, p.9) argue "we should no longer be frightened of cross fertilization between B2B and B2C marketing."

Rather than diminishing the importance of the IMP approach this has raised its relevance as its boundaries now become extended to encompass the entire supply network up to and including the consumer.

Network theory embraces many dimensions. These include resources (Harrison and Håkansson, 2006), relationships, network pictures

(Henneberg et. al. 2006, Ramos et. al. 2005, Leek and Mason 2010) network position (Håkansson and Snehota 2006 and Ford 2003) network types (Markasen 1996; McCann 2003) Innovation (Edgerton 2006; Waluszeski 2004), path dependency (Håkansson and Waluszeski 2002), strategy (Gadde et. al. 2003; Ford et. al. 2003, Håkansson and Snehota 2006) and managing in networks (Ford 2003; Ford and Håkansson, 2006).

One connecting factor between the new ideas coming forward and the longstanding IMP approach is the move away from a transactional view towards interaction bringing together the more enduring dyadic relationships which have been at the core of IMP thinking. These relationships involve looking at suppliers looking into the company just as much as looking out of the company to customers and can be analysed in areas such as core competency (Prahalad and Hamel 1990), resource-advantage theory (Hunt 2000, 2002) and service-dominant logic (Vargo and Lusch 2004, 2008, 2011).

The study of networks is likely to continue to become the focus of an increasing number of studies as changes in communications and transportation, amongst other things, have given rise to complex business configurations to cope with competitive pressures. Joint ventures to access new markets have become more common. It is now harder to define customers, suppliers and competitors and it seems likely that networks offer an increasingly useful way to examine and interpret what is happening.

The IMP approach is based on asserting that firms working in business markets are linked through long lasting relationships which show increased commitment over time (Ford 1980, Håkansson 1982, and Håkansson and Snehota (1995). This approach leads to better cooperation and coordination which adds more value when compared

to the conventional view of a chain where transactions take place more at arms' length (Blankenberg et. al. 1996, p. 1037).

When a business is considered as being part of a network of exchange relationships (Ford 1980; Axelsson 1992) certain phenomena become apparent that are not easily identified by other approaches. These include how the actors inter-relate and how they use and share resources.

In network terms Håkansson and Waluszewski (2002) identify some major aspects of current business that suggest there would be value in looking back and re-examining areas where they consider judgement was made too quickly. These include an embedded belief in progress (Basalla 1988, p. 131), science as a creator of prosperity (Bernal 1939, p. 902), and a world which is less and less dependent on traditional resources such as land, labour and capital, with the major producers of wealth now being knowledge and information (Gibbons et. al., 1994, p. 57).

In their study in 1998 Oliver and Ebers looked at a variety of papers published in different sectors which were related to networks to ascertain if some commonality could be found. This led them to conclude that there was a high degree of confusion in terminology and they quote Nohria (1992, p.3): 'Anyone reading through what purports to be network literature will readily perceive the analogy between it and a "terminological jungle in which any newcomer may plant a tree".' Oliver and Ebers (1998, p.573) consider there to be "a greater opportunity for fruitful cross-disciplinary and cross-perspective dialogue than is often realized". They write that the network approach offers new ways of analysing existing subjects.

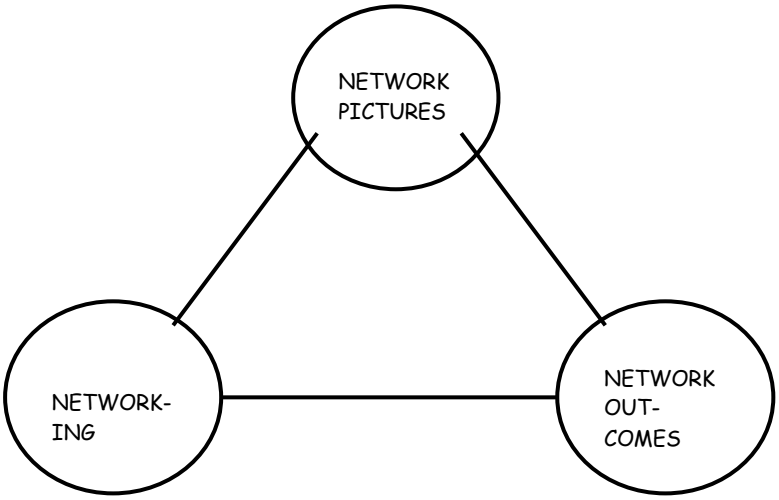
These two aspects of revisiting the past with current IMP thinking and examining network evolution over the very long term are clearly areas

worthy of study which have not yet been the focus of any full studies using the IMP approach. This thesis focuses exploring these issues predominantly through exploring "Network Pictures", which are actors' interpretations of their network environment (Ford et. al., 2003). Empirical research into the "Network Pictures" of managers and the connection between these and business behaviour develops the researchers understanding of how managers perceive the relationships they have and fit them together mentally (Ford et. al. 2003; Henneberg et. al. 2006; Ramos, et. al. 2005). These are valuable for identifying what interactions actors feel are important and form one of the three main observable artefacts of network interaction (the other two being purposeful networking and outcomes (Ford et al., 2011). Thus they form the basis of our understanding of all the other phenomena of interest for IMP scholars and will be elaborated on in the next section.

2.3 Observing Network Interaction

There have been a large number of attempts to describe and analyse networks and company positions within them and to help companies manage or change their "network position" (Håkansson & Snehota, 1995, Ford et. al., 2003). To examine what happens in these networks a number of theoretical tools have been suggested. The first is the Actor-Activities-Resources approach. The "A-R-A Model" (Håkansson & Johanson, 1992) provides a conceptual framework of the process and outcomes of interaction, based on empirical studies in the IMP research stream (Ford et. al., 2003:Ch. 8) and is now a cornerstone of the network approach along with the associated 'Model of Management in Networks' (Ford et. al., 2003) shown in Figure 1 which helps understand what is happening in networks. These models offer a way of looking at actor bonds, resource ties and activity links between a company and its counterparts.

Figure 1: The Model of Managing in Networks



Håkansson and Snehota (1995) explain that even if a business tries to remain static within its network, the network itself is continuously evolving and changing all the companies within it. Conversely, they observe that when actors choose to make a number of small positional moves, it does not take long before the whole network may look substantially different. Each member of the network can have an impact on the look and form of the network (Andersson et. al., 1994). Thus over a period of time we can expect to see significant changes in the characteristics of the network and the presence, absence or position of any one company within it.

Naturally we expect companies to try to influence those around them in order to better secure their long-term future. But these attempts at influence will be based on the company's view of the complex inter-dependencies that exist in the network, their "network picture" (Ford et. al. 2003). But it is unrealistic to think that a company can "make sense" of a network of effectively infinite size and complexity (Blankenberg 1992; Holmen and Pederson, 2001). Lundgren (1995) suggests that when a company is analyzing its position it must set

boundaries for the network it examines which are appropriate to the particular decisions that it is making. This creates a dilemma for any business since significant events may take place in distant parts of the network, or in "another" network, not fully associated with the main or obvious one. Also, threats to the future of a business often come from unexpected locations. For example Christensen (1997) describes how a company can be outflanked by a new technology offering apparently inferior benefits into a separate, although linked, sector of the network.

2.4 Network Pictures

Logically each relationship a company has with another business has implications for the other relationships within the network. As such the network comprises the companies and the relationships between them. Certain actors in the network may have a powerful influence without actually being involved in direct transactions.

Individual actors will each have a different view of the situation depending in part on how they analyse the situation and what they plan to achieve from the analysis. The concept of network pictures was first discussed by Ford et. al. (2002) and were more precisely defined by Ford et.al. (2003) and Ford and Håkansson (2006, p.21) as "a descriptive construct that can be used by researchers to encompass a particular actor's view of the surrounding network and its scale, structure and interactions, as well as the evaluative dimensions it applies to them". Trying to understand how actors might use network pictures is an essential element of this dissertation. Their value as a measure of the organizational actors' subjectively perceived view is made by Ramos et.al (2012) and Henneberg et. al. (2010). They identify how this view leads managers to take decisions related to the actors, activities and resources. At the same time Ramos et. al. (2012)

explain how network pictures can work at a different level as a research tool, being the researchers' effort at sense making of the network. Effectively the researcher is picturing the actor's network picture.

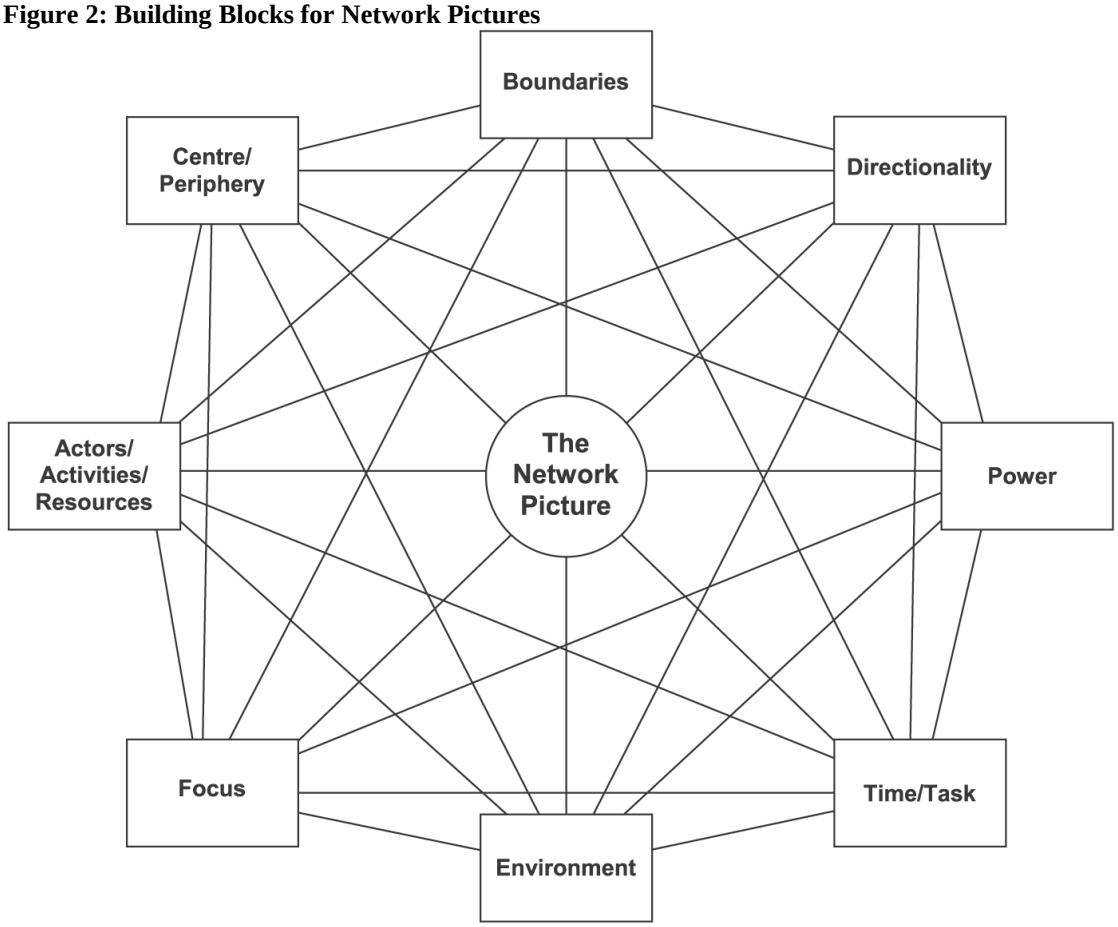
The network pictures of companies, on which their interactions are based, provide an important explanatory tool for both the researcher and the manager. Managers need to examine their own network pictures and those of the companies around them and the assumptions on which they are based. These may form a way of improving their understanding of the dynamics of the network and to reduce the danger of missing significant changes. Consequently the choice of network "horizons" is a major decision for management in the drawing of their "network pictures" (Ford et. al. 2003).

One reason for this is that other actors in the network are obtaining new information, formally and informally, about the changes taking place and forming their own assessment of their implications. A company has to continue to adjust its plans in anticipation or in response to activities elsewhere in the network. It has the capability of terminating some relationships and establishing some new ones, but there is a limit to how much disruption it can successfully undertake during any single episode (Håkansson & Snehota (1998); Waluszewski (2004)).

A number of areas related to networks pictures have been covered in recent years in the IMP Group's business marketing literature. These include dimensional conceptualisations (Henneberg et. al., 2006) and operational aspects (Ramos and Ford, 2010), and the dyadic approach to compare network pictures of individuals from two companies (Leek and Mason, 2009).

The complexity of network pictures is highlighted by Henneberg et.al. (2006) when they demonstrate how different managers perceive them, noting the high level of subjectivity involved. The building blocks suggested by Henneberg (2006, p.416) shown in Figure 2 are useful in developing and studying these networks. Relating network pictures to the study of the evolution and dynamics in business networks would seem likely to be a meaningful and useful approach.

Figure 2: Building Blocks for Network Pictures



Network pictures are significant in the process of organizing in business networks as they generate economic consequences for actors by shaping their decisions. Such strategic actions in networks are described by Ford et al. (2003) as 'networking' activities.

In addition to this aspect of network pictures which can be termed SUBJECTIVE INTERPRETATION Ford and Håkansson (2006) identified four further dimensions – INTERDEPENDENCE, RELATIVITY, JOINTNESS, and TIME – that characterise the interaction taking place in networks. It is suggested that these are important issues for researchers in trying to make sense of interaction between business companies. These dimensions build on the IMP view of business networks that accepts a structure of relationships and a process of multi-lateral interaction, both conscious and unconscious between individual actors (Håkansson and Ford, 2002; Ford and Mouzas, 2008). Allied to this Araujo, Dubois and Gadde (2003) argue that a business network has no identifiable boundary and is not limited to those companies with which any one actor has contact. The business network is not owned by any one company, managed by it, nor created by it.

As such these dimensions suggested by Ford and Håkansson (2006) together comprise a useful theoretical device for examining the interaction within the network. Interdependence both precedes and flows from interaction and is related to the resources and capabilities of actors. The interactions taking place will depend on each actor's view of the situation at that given moment in time. These will come from a complex mix of previous experience, views of the future, industry norms and expectations of how others are likely are likely to react. To start in business companies need to interact and over time this will almost certainly lead to more than just simple exchange and jointness of resources, of knowledge will be the result.

2.5 Purposeful Networking

Håkansson & Ford (2002) formulated three network paradoxes which they suggested be used to look at the business development process to gain a feel for the complexity that companies face in their everyday operations:

1. "Strong relationships are the heart of a company's survival and of its growth and development. But a well-developed network of relationships also ties a company into its current ways of operating and restricts its abilities to change" (p. 250).
2. "A company's relationships are the outcomes of its strategy and its actions. But the paradox is that the company is itself the outcome of those relationships and of what has happened in them. Thus a network is both a way to influence and to be influenced" (p. 252).
3 "Companies try to control the network that surrounds them and to manage their relationships to achieve their own aims … the paradox is that the more a company achieves this ambition of control, the less effective and innovative will be the network" (p. 254). These inherent paradoxes are described in Figure 3 (Håkansson and Ford 2002).

Figure 3: the three network paradoxes

PARADOX 1:
A company's relationships are the basis of its operations and development.
BUT
These relationships may also tie it to its current ways of operating and restrict its ability to change.
PARADOX 2:
A company's relationships are the outcome of its own decisions and actions.
BUT
The company itself is equally the outcome of its relationships and what has happened within them.

PARADOX 3:
Companies try to manage their relationships and control the network that surrounds them to achieve their own aims.
BUT
The more that a company achieves this ambition of control, the less effective and innovative the network will be.

In situations when companies are interacting network outcomes can be examined by way of the 6Cs (Ford et.al., 2003; Ford, 2002). These are laid out as follows:

Confront or Conform,

Consolidate or Create,

Coerce or Concede

These 6Cs exist within what Ford (2003) calls the Three Aspects of networking as shown in Figure 4.

Figure 4: The three Aspects of networking

THE FIRST ASPECT OF NETWORKING	CHOICES ABOUT WORKING WITHIN RELATIONSHIPS	CONFORM OR CONFRONT
THE SECOND ASPECT OF NETWORKING	CHOICES ABOUT NETWORK POSITION	CONSOLIDATE OR CREATE
THE THIRD ASPECT OF NETWORKING	CHOICES ABOUT HOW TO NETWORK	COERCE OR CONCEDE

Understanding the Network Paradoxes and these aspects of networking suggest a way of looking at interactions within networks and fitting them with the complex relations going on in the surrounding network. The dissertation will relate the business evolution in the case to these current ideas on the dynamics of business networks and will take into account the inherent Paradoxes of networks as described in Figure 3.

The early work on networks put a very heavy emphasis on the dyad as the major focal point (Ford, 1980), looking at how the relationship of two companies might evolve as they get to know each other and make adjustments to work better together to meet market conditions. It later became clear that these dyadic relationships only made sense if the other influences on the actors were considered and the network of firms involved is considered. A number of attempts have been made to characterise types of network.

Markusen (1996) was one of the first to do so and her typographies of industrial districts provides a useful basis to help us understand the overlap between purely local "networks" and the wider network in which firms and industries are placed. She rather rejects the concept of simple local area networks in favour of associations of companies that have some specific driver such as a key central client – an automotive or defence business for example – or government support such as one for a free trade area. This is supported by Gordon and McAnn (2000, 2003, 2005) who considered some of the tighter networks in the UK to be a consequence of major firms being attracted by incentives and bringing suppliers with them.

Markusen (1996, p. 297) considers three basic forms of cluster: the "Marshallian Industrial District", the Hub-and-Spoke District" and the "Satellite Platform District". The "Italianate" she describes as a more cooperative and interactive progeny of the Marshallian; much more willing to take risks. Her "hub and spoke" type and the "satellite platform" type in particular only function effectively in the longer term if the participants recognise that they are managing within a network which extends beyond the locality. Studies by Schmitz and Nadvi (1999) indicate that dangers exist if firms in a local industrial district do not establish and maintain relationships in a wider world. Rhoda and Burton (2010) explain this in terms of the Mexican footwear industry which has only recently moved from being insular and

protected from outside competition by duties and tariffs for many decades. This leads it to being less competitive globally. The Mexican tanning trade, by comparison, had not had this protection and has systematically modernised and entered new sectors such as automotive leathers.

The Markusen (1996) analysis is informative with regard to how companies might go about the process of purposeful networking and in particular decisions related to expanding or contracting networks. The decisions involved in staying with local partners or being determined to find more international relationships inter-relate with the Three Aspects and the Network Paradoxes.

2.6 Network Outcomes

In looking at IKEA Håkansson and Waluszewski (2002) give us three clear pointers to the way we can observe companies, relationships and outcomes by taking a network perspective. Most critical is that network outcomes often have no clear connection to the start-out intentions. Secondly during a change process there is no "true picture", but rather a series of separate interpretations which the authors describe as "in the eye of the beholder". At the same time neither existing technologies nor innovations are neutral or simple in relation to the individual company.

It is clearly demonstrated that the change process is neither stepwise nor mainly carried on within the boundaries of the individual companies. At the same time the behaviours of companies change radically over time, and often final outcomes are not anticipated beforehand.

The relationship between means and goals is a non-linear interactive one since "the amount and kind of information at the disposal of

actors is constantly changing". This fits perfectly well with the thoughts of Dosi (1988) on technology and innovation. The direction a company will take after a process of development is likely to be heavily dependent on the changing relationships going on during that process.

Establishing the outcomes is a necessary element in understating the drivers and dynamics of purposeful networking. In looking at networks over long periods it should be easier to identify network outcomes that have come about as a result of years of interaction at a variety of levels of intensity. The use of the Aspects allows examination of the dynamics within networks as do the Network Paradoxes.

At the same time the limitations identified in the Three Network Paradoxes, in particular Paradox three, are network outcomes that have the potential to restrict a company's future activity.

Increased interdependency is also an outcome of purposeful networking and according to Håkansson and Olsen (2011) it is these interdependencies – along with motion and variety – that are key elements in innovation. It is clear that limiting networks is difficult as they continue to evolve, so any decision on an outcome relates to a subjective decision about the moment in time to be chosen. Ford et. al. (2009) talk of interaction as a process which changes and transforms aspects of the resources and activities of the actors. These could be small changes such as a product offering adjustment or lead to a total business reorganisation. Indeed Ford et.al. (2009, p. 11) note that "successive interaction over time can lead to outcomes that mean that the activities and resources of the actors and the actors themselves are *transformed* through interaction".

Interaction between companies is an inevitable consequence of being in business and routine interaction is a tool to provide stability; yet it is often likely to produce unpredictable outcomes making interaction a mix of the dynamic and the stabilising. At the same time the outcomes of interaction will likely be the subject of different interpretations by different actors. The A-R-A model implies that outcomes of an interaction process can be considered in terms of the three areas of Actor Bonds, Activity Links and Resource Ties between the counterparts (Håkansson and Snehota, 1995). Closely allied to these are the resources, the web of actors and any new patterns of activity created during the period of interaction.

The IMP approach allows observation of the network outcomes of the same resources applied in different situations. Waluszewski (2004) highlights this via an example of river ice, which has negative value when broken up to let shipping through but positive value when used for ice sculptures and other items related to recreation or tourism. Ice had even more value in terms of resources and their management within different networks when the 19th century New England ice industry is considered. Here ice was harvested from lakes and rivers to be used with great value as ballast for shipping and for refrigeration, especially when it could do both simultaneously. (Ford and Redwood, 2005)

The IKEA study examines how the network affected and was affected by a single large company with clear objectives. We can identify some of the elements which drive a company to continuously examine and adjust its network position. The relationships are the sources of a lot of technological change, but the studies also help us look for a better understanding of what is “new”. Often “new” has been known for some time, even decades, by at least some of the actors, but the innovation is that it is brought forward and combined in a new way.

Also Håkansson and Waluszewski (2002) help us re-examine situations with their explanation of "heaviness" and variety of "resources" and to consider how they relate to each other, and are rarely neutral, but rather combine to create a certain direction. This overlaps with the "role of the collective processes in the development of a new demand".

They also raise the question about the role of a lead user, and the way in which interaction is related to the creation of new supply and demand interfaces. They present the picture that path dependency stops a firm from straying beyond traditional lines, but the creation of crossroads between established paths can facilitate the development of new solutions.

2.7 Technology and Innovation

As one possible networking outcome Technology and Innovation needs special note. The role of technology and innovation in networks has great importance as nearly all the studies of medium and long term identified have had their focus on these areas. Business networking involves multiple actors, each of which initiates interaction and reacts to the initiatives of others. Business networking takes place within the context of a pre-existing pattern of interdependencies between actors and contributes to the evolution of those interdependencies. These interdependencies form the links between the variety of resources and activities within individual actors and relationships that are distributed across the network. The networking of multiple actors and the evolution of activities, resources and interdependencies contribute to the constant motion of the network. Thus, the process of innovation in this landscape is multi-actor, multi-dimensional and sequential. Innovation is an outcome of an existing and evolving

pattern of resources and activities and the networking of multiple actors. Innovation is a continuing process and its outcomes at any point in time will be perceived differently by those involved in it, whether they recognise it or not. Each of these actors will selectively confront some of the issues or problems that it faces before or within that process while conforming to other aspects of its current interactions. Each will seek to create or consolidate on its existing patterns of interaction and lead or follow counterparts in aspects of their interactions and in the direction of innovation or change.

Recent studies on network pictures and their role in the process of change within business relationships and network structures include Abrahamsen, Henneberg, & Naudè, 2010; Colville & Pye, 2009; Kragh & Andersen, 2009; Håkansson and Olsen, 2011.

Many new technological developments have been described as coming from co-location of firms in what is termed a cluster or local industrial district. Porter (1990, 1996, 1998) has led this discussion with the definition of a cluster as "a group of interconnected firms and institutions in a particular field present in a particular location", (1998, p. xii) which evolves from earlier definitions by Schmitz (1995) and Piore and Sabel (1984)[2]. The origins of cluster thinking go back to Alfred Marshall (1890) who wrote that "industries tend to cluster in distinct geographic districts, with individual cities specializing in production of narrowly related sets of goods".

Lundgren (1995) asks us to consider the three stages of network evolution as genesis, coalescence and dissemination. He is considering new high technology innovation and while there is an

[2] A group of producers making similar things in close vicinity to each other (Schmitz 1995, p.533) "Cluster" is an industrial district, i.e. a core of more-or-less equal small enterprises bound in a complex web of competition and cooperation (Piore and Sabel 1984, p. 265)

assumption that a new technology can lead to an altogether new network in fact it seems that companies link together in new ways with a mix of start-ups and established firms.

He covers the linkages that unite scientific research, technological development and economic change, and the forces (Lundgren 1995, p12) that "provoke the emergence of a new industrial structure, a new network".

The emergence and evolution of new technological systems are parallel processes and new knowledge in terms of process or product ideas will often emerge at the interface between different knowledge areas. "In exchange situations different kinds of knowledge come together to create innovative solutions" (Håkansson, 1987, p.4). This is taken further by Håkansson and Olsen, (2011) who highlight the importance of motion, interaction and variety since the "value of a given resource, activity or actor depends on its combining with particular others" (Håkansson and Olsen, 2011, p.25). The managerial activity is considered a critical function in making this happen. One important aspect of managing innovation is acknowledging the dependency on others and interactions involved in managing friction in the network as new ideas evolve. It forms a network of shared understanding (Håkansson and Olsen, 2011, p.22).

History, and time, is clearly very important when it comes to innovation, and Lundgren (1995, p.61) gives examples as widespread as the steam engine to computers to demonstrate gaps of many decades between the invention and widespread uptake of an innovation.

Lundgren's work brings history and economics together through the window of the development of new technologies. The stated aim of Lundgren's work is to explain the "emergence of a new industrial

network" (Lundgren, 1995, p.69) but perhaps in terms of the way we now look at networks we are actually looking at a situation where new linkages develop which join up elements of a number of existing networks to create what appears to be a distinct and individual network. Something of this sort happened when Woolworths closed in January 2009. New relationships were quickly established so that other stores could sell the same or similar products that had been in Woolworths and the retail gap was soon filled. Even if many of the companies in an emerging technology are start-ups they each start to function within already existing networks and the linking of those networks will create a new appearance and a new network area.

The approach by Lundgren discusses network theory in terms that "a specific firm's behaviour is controlled by its relationships with the other firms and not by internal factors or by aggregates of unspecified units, such as competitors and markets for supply and demand". This is allied to the arguments, earlier discussed, that companies must beware of becoming too involved in a thought process that defines them as being either suppliers or customers. They need to be able to take a wider view. One danger implied by Lundgren's work is that as the technological systems and the networks of inter-related firms extend their interplay it becomes easy to take a narrow view of the total scope of the network.

Lundgren develops some guidelines as to why this might be. For instance technical problems in a network view appear to be much more important than price, and individual relationships between companies are heavily affected by the relationship each party holds elsewhere in the network, and by the properties of the network as a whole. As such networks can in some ways be considered to represent a coordinated mechanism, a governance structure which is quite different from the traditional view of markets and hierarchies.

What is clear is that over time technological change is one of the propelling forces determining the future structure of a network. It is also an interactive process, which involves search processes to deal with problems, and the associated evolution of technology is a process of accumulation.

Inside any given network Lundgren points out that the cost of transfer, diffusion or imitation of technology is different for different actors. Innovations bring together new sets of actors who create what he defines as a "new technological system". This "newness" is to a large degree a reorganisation of the old order, but Lundgren argues that what is new is the inclusion of some novel element – a new activity, a previously untapped resource, or new actors.

Evolving out of this is an argument that it is unhelpful to think of technological development as having a beginning and an end, in a sort of discovery, innovation and then diffusion and imitation cycle. Lundgren suggests that it needs to be acknowledged that the evolution of technical systems has no real beginning and no ultimate end. Most important is the recognition that technology is not autonomous but resides in a system that has links to a network of actors, who are all in some way there to govern and develop what is happening. This is part of any process of legitimisation and adoption, which is not segmented or necessarily consequential but is described as "omni-present, continuously altering the structure of the industrial network." Changes in the network are occurring as the result of changes in the socio-technical processes of creation, integration, and expansion. This also resonates with Edgerton's (2006) arguments on the non linear movement from the stages of invention to use of new technology.

The technical system evolves as a result of the creation of novelty, the development of that novelty and its adoption and use. The network of

actors changes appearance as a result of networking that is driven by the identification, the legitimisation and the use of the novelty. Taking a biological metaphor from Pantzar (1991) Lundgren (1995, p. 194) suggests "business networks evolve from a dispersed structure into a unified structure, which is transformed into a compartmentalised structure". Making success of an invention usually requires generating income of some sort, developing a means of generating self-sustaining growth. To do this a business needs access to users and to suppliers. These linkages enable adaptation and this in turn forces the firm to adapt to some of the more stable structures of the industry.

Although this covers only the limited time period of the development of digital imaging (Lundgren, 1995) in Scandinavia it does demonstrate the way in which a new technology can evolve out of local circumstances. It also shows that key actors must be receptive to new ideas for diffusion to take place. It demonstrates the potential value of a longer term study such as this.

Amongst other work on networks themselves studies have been done on Pharmacia Biotech (Andersson 1996), digital imaging Lundgren, A (1995) and on IKEA (Håkansson & Waluszewski, 2002) that are longitudinal but only covering a limited number of years. All these studies are largely built around the area of innovation which is of course one of the most important areas for modern business. Ford and Saren (1996) and Teece et. al. (1988) link innovation into both the economic and network areas while Cowan (1997) looks at the development of technical systems through the centuries tying them into social and economic changes.

This brings to the fore the importance of time in terms of any such study and how at any moment in time the resources, the relations and views of networks are going to be quite specific.

2.8 Time

Various attempts have been made to describe and analyse networks and company positions *at a particular point in time* and to help companies to manage or change their network position (Håkansson and Snehota 1995, Ford et. al. 2003). There have also been a large number of in-depth single case studies permitting thorough description and analysis of network processes and structures (see e.g. Baraldi, 2003; Gressetvold, 2004; Håkansson & Waluszewski, 2002; Holmen, 2001; Lind, 2006; Lundgren, 1995; Andersson, 1996; Wedin, 2001) all looking at periods between three to ten years.

It is clear from this research that networks are not created, controlled, operated or owned by a single company. There are no new networks (Ford and Redwood, 2005). When a new company emerges, it does so into an existing network. The company's start and subsequent development will be affected by the interactions that are and have already taken place in that network. But in turn, the company will have an effect on the network itself. The very idea of interaction in business networks clearly involves time. Ford and Mouzas (2008) consider episodes and scale along with non-linear and recursive time. Any business relationship is the result of an interaction informed by what has happened before. Ford and Mouzas (2008) highlight important aspects for the actor to consider such as time to first order after the first contact, and to first profit.

Business relationships are often long term and imply a considerable investment in various company resources from both sides. They may lead to relationship specific investments by counterparts and to high levels of trust and familiarity (Ford and Mouzas, 2008). This along

with interdependence which develops at the same time can limit a company's options for change.

As a consequence the effect of events on a network over a long period of time is clearly of interest. Since many areas of change from personal through to fundamental technologies can take years or decades to work through an industry this is a deficiency in the area of network analysis.

This is highlighted by Ford and Håkansson (2006) as an important element in understanding what happens to networks. Yet network evolution over time has been difficult for researchers to cover as the tools of network analysis have only been developed over the last thirty years, while we know that the implications of certain events such as technological or economic change often evolve over much longer periods. Many innovations and inventions only make a real impact on the marketplace four or five decades after first being tried. Looking at networks over extended time periods would therefore appear likely to offer the chance to obtain some valuable insights. Relationships can be observed as they evolve and develop and some can be seen to be strengthening while others decline.

Addressing the subject of process and temporality in business networks has been an area of increasing focus. It has been looked at in the business network literature from the two aspects of theory and methodology (Halinen & Tornroos, 1995; Easton & Araujo, 1999; Araujo & Harrison, 2002; Medlin, 2004; Mattsson & Andersson, 2006, 2009; Hedaa & Törnroos, 2008; Dubois & Araujo, 2004). The approach has largely been to explain change and evolution in business networks, modelling sequences of events and deriving methodological principles to study change.

Underlying the thinking on time in these cases always reverts to a dualistic approach explained by Araujo and Easton (2012) in terms of "subjective and objective". They discuss the historical approach to time in terms of the A series which involves a continuous flow between past, present and future with Time conceived in terms of tense. The B series uses a different scale which looks at time in terms of chronological dates. Araujo and Easton consider both these series and how they might best be applied to the point of view of the situated actor. They consider it important that we want to work in a tensed B series environment in which our network concepts can be encompass the meaningful experience of situated actors. They consider, however, that in reality situated actors approach uncertain futures using a combination as they "stabilise" entities and their relations to make sense of the possibility of action in the "here and now". Important to this stabilisation is the telling of compelling narratives which need to be more than just a plausible listing of a sequence of events. They require credible interpretations of the past and compelling versions of the future. An important conclusion from Araujo and Easton (2012, p.317) is that to understand events we need to find ways to "capture the messiness, uncertainty and situatedness of action in business networks". This means getting closer to the challenges that actors face while they are involved in active decision making.

Looking at some of the major documents covering changes over time we have to consider strategic studies, economic geography and business history (see e.g. Amin and Hausner 1997; Grabher and Stark 1997; Pyke and Sengenberger 1990; Staber et. al.. 1996), along with aspects of technology: as well as the work of the IMP group (see e.g. Ford, 1997, 2002; Håkansson and Snehota 1995; Axelsson and Easton 1992).

2.9 Strategic studies

While strategic studies do not look at business from a network centric point of view in many instances (Berger and Luckman 1967; Weick 1979; Porac, 1989) they have pointed to the existence of some form of network environment inside which a company has to enact its business. As such this work suggests that a pure network approach has been missing and could add new levels of understanding to these complex movements of events.

Porac (1989) analyses the thought processes of individuals in assessing a business and its environment, and their ability to reflect upon and articulate their interpretation of the network outcomes (Berger and Luckman 1967, Weick 1979). Porac (1989) discusses the important interrelationship between "firm level strategies" and "group level structures".

Weick (1979) interprets this process as one involving understanding linkages. It is accepted that one company's actions are likely to be impacted by another's, but Weick does make it clear that the mental models of the decision makers can only be partial representations of the transactional network and it also argued that organisations only use "parts of persons" (Weick 1979, p.13) so that an actor can behave in different ways in different circumstances.

When a business considers its strategy in terms of a transactional network a company might consider itself to be part of the "consumer products industry" (Porac, 1989, p. 399) and in doing so locate itself psychologically in the supply side of the business. Alternately another view would be the demand side "market" definition. As each business builds its mental model of its network the comparison with competitors tends to take priority. From this and the various levels of network interconnectivity the concept of "socially-shared beliefs"

evolves. Porac's conclusion, which flows from Stigler (1964), Porter (1980), and Huff (1982), is that strategic choices of individual firms take place within the context of many shared beliefs about how and with whom to engage in transactions in the market place.

This aspect of socially shared beliefs overlaps with a similar concept when looking at the foundation of businesses by selected groups such as Quakers or Jews, where shared beliefs and high levels of trust are apparent. In Porac's work he argues that a set of shared beliefs may arise from the fact that companies work in the same area, have to face the same difficulties and competitors, and so grow "together" over time. This aspect has considerable relevance to evolution of networks as these groups have "ready-made" networks of expertise in many areas for the business start-up and so become a short cut to resources.

Studies in strategy also look at the various ways in which companies decide with whom they should partner and the type of relationship the partnership should be. Teece (1988) indicates the significance of firms working only in the areas of their "core competences" which Dosi explained as doing "what they are good at". This thought immediately impacts on organisational literature in terms of the degree of vertical integration and diversification. The rather abused modern term of "business model" applies here. Core competencies also relate to the availability of resources and capabilities to a company. The decision to own or buy-in directly impacts how and with whom a company inter-relates in its network. They also impact on whether the other network partners are perceived as partners, as customers, or as competitors. Increasingly this position is harder to define with many situations creating hybrids of all three.

One significant aspect is path dependence (Teece et. al. 1997, p.522-3). This suggests that a company's activities today will be constrained

by its actions yesterday. Arthur (1989) explains this as a "lock in" affect such as happened with the QWERTY keyboard and the VHS video recorder. Araujo and Easton (2012, p. 314) explain how innovation process involves a subtle balance between path dependence and creation (Garud & Karnøe, 2001, 2003). In path dependence, temporally remote events, sometimes spanning decades, define the possibilities for the emergence of new ideas, whilst path creation focuses on the role of situated actors as they attempt to shape history in the making. "Innovators stand at the intersection of past, present and future." They offer interpretations of past history, actively shape objects and contexts of action, mobilise resources based on a particular version of the future which they attempt to render "real".

Dosi (1995) and others (Miller, 1992; Greiner, 1972) evolve this at firm level to argue that a correct action by a company today will contain the seed of its own future crisis – "the Icarus Effect" – as described by Miller. This marries well with the IMP approach (Ford, 2002) as does the concept of core rigidities (Leonard-Barton, 1995). She argues that an organisation that tightly controls its "core capabilities" finds these same capabilities ossifying over time.

2.10 Economic Geography and Business Histories

While the network studies area lacks long term case studies, there are other studies that do look at business in this way. These include economic or industrial geography which provides data on the rationale behind the location and relocation of industries, helping us to understand the significance of labour costs, societal and political change, economical aspects such as transportation costs, and the location of raw materials.

Business economic historians, applied industrial economists and some studies of technology have helped to give us an understanding of the way companies adapt to events around them and how they manage innovations. They build on empirical "stories" with a focus on the uniqueness of the detail, while strategy and economic theory is more analytical and searching for simplification and abstraction.[3]

Many of the macro-environmental factors that impact on networks were highlighted in the work of Hoover in the 1930s. Hoover (1937, 1948) looked at industry costs and societal change in the New England area of the USA at a time of rapid industrial and population growth. He is sometimes classed has having been one of the major founders of economic geography. His work identifies events that effect business at specific moments and how industry reacted to deal with them. As such this material provides useful contextual material for network analyses.

The seminal text in economic geography is Hoover's 1937 treatise on the shoe and leather industries of New England. This work demonstrates how varying costs such as raw material, transport, and labour build pressures on firms to relocate in different places. Indirectly this work highlights the many network connections which a company needs to carry on its business, including many in quite separate and less obvious sectors. It becomes clear that complex changes and adaptations take place in network relationships before a company can move its physical location. Hoover's work is important for this dissertation as the industrial areas and some of the time periods he look at overlap.

[3] Dosi, G (1988) *Sources, Procedures, and Microeconomic Effects of Innovation* Journal of Economic Literature Vol XXVI (Sept 1988) p 1120-1171 makes this point in his discussions of the literature related to innovation

Implied in Hoover's study is how new or stronger relationships developing elsewhere in a network can impact on a business that would actually prefer to stand still, and yet is forced to relocate to avoid becoming non-competitive.

Furlan et. al. (2009) examines how local SMEs can utilise local relationships to gain access to international markets by building on the knowledge and experience of their nearby network partners with whom they are interacting. It is clear that a local cluster without any international links could happily continue on its own until, more than likely, it finds itself unable to compete in the global network which has continued to change and evolve around it.

2.11 Technology studies

Technology and innovation are closely allied. It is hard to look back at any business without considering the role played by technology.

Since the start of the Industrial Revolution and especially from the mid18th century the speed of technological change has continued to accelerate. Cowan's (1997) work on the development of technology in the USA, and in particular her work on technological systems places the development of technology into the social and economic picture. She shows how technological systems require people to be embedded within them to be successful and the approach extends to an understanding of how the firm itself has to be embedded into a network of other firms in order to develop and exploit its skills. She argues that although the modern world of computers, plastics, automobiles and skyscrapers may make us think of current times as characteristically technological we are no more or less technological than our ancestors. In all times and places mankind attempts to use tools of some fashion to control the natural environment in which we live. In order to exploit technology people become embedded in arrays

of technologies, or technological systems. Her study (Cowan, 1997) looks at the evolution of certain technologies in the USA over its 250 years of history. The leather industry was just such a system with an enormity of skills from the slaughterhouse to the boot, saddle or garment. Cowan notes (Cowan, 1997, p. 63) that as industry moved from the farm to the factory by 1860 the production of boots and shoes alone was one of the top ten leading industries in the USA.

The late 19th century saw the introduction of interchangeable parts and of transport systems that reduced journey times dramatically. An example relevant to this dissertation is the journey from New York City to Albany (the upstate capital) which reduced from many days, indeed weeks, to two days when the first 4 miles per hour paddle service started in 1807. It then went down to 10 hours by mid-century and then to 3 hours and 19 minutes in the "Mary Powell" in 1904.[4] Today we are seeing technical developments that are too complex and carry too much risk for one company to undertake alone in areas such as defence and aerospace. Companies increasingly have to work together in teams to share knowledge and financial risk. All these technologically related developments have profound impacts on the relationships needed for their development and introduction, and consequently upon the potential value of studying networks.

The literature on technological development, apart from some recent papers on digital imaging by Lundgren, A (1995) and on IKEA by Håkansson and Waluszewski (2002) does not examine the network perspective, but does provide us with material information to recognise the imperative for relationships to be developed and to evolve. Even without going into depth about the technical systems that Cowan analyses the fact that so many innovations come from fitting one new idea with a number of older ones in a new

[4] New York Times, August 7, 2004 A29, and Thurston (1891)

configuration or format highlights the potential and actual advantage of understanding and utilising resources within a network.

Dosi (1988, p.1121) makes it clear that the process of introducing new products and processes is "the outcome of the interaction" both within and without an industry. In particular he relates to "broader causes external to the individual" business. He further develops this into a need for research external to the firm associated with formalised activities and applied research, through which it becomes apparent that for successful technology management and progress institutions and companies need to make more connections within networks.

More recent work by Parsons and Rose (2003) also indicate that technology is not a linear process of improvement but a matter of fits and starts, and that technology occasionally becomes "lost" as new ideas are introduced and heavily promoted. This aspect is also emphasised by Waluszewski (2004) when she discusses unexpected uses of the Facit company technology some decades later in the biotech supply industry.

The utilisation of technologies in different contexts is highlighted by Edgerton (2006) and Lindquist (1994). Technology needs to be considered in terms of both the innovation and use. Edgerton considers that an innovation centric timeline of technology leads us to overlook the longevity and long term importance of technologies. The bicycle rickshaw may be an old technology but its true worth and highest utilisation only came with asphalted roads. Although many countries are now trying to eliminate the rickshaw as "old technology" Edgerton (2006) argues it is in fact an excellent transport technology for many places in the world today.

Edgerton's (2006) position is that a use-centric history looks at technologies throughout their lives, asking when they are in

maximum use, among many other things. Asking what technologies were in use, when and what for, leads to conclusions about significance, which an innovation-centric history cannot begin to ask but often assumes. It also leads to consideration of such subjects as the history of maintenance and the associated resources needed to carry it out. Use-centric history needs to be distinguished from a long tradition of study which asks how users influenced innovation as discussed by Cowan (1997). He also argues that the best use of innovation often happens in a distant location (frequently a different country) where its configuration with other developments gives it additional value.

The apparent increasing need for innovation today as a differentiator in a world of over supply is much discussed[5]. Innovation has always been important but as well as being an exciting act of discovery and potential for profit in the 21st century it is now considered, especially by governments, a significant aspect of business survival. For many industries innovation in technologies – product, process or marketing – are a requirement and be they incremental or disruptive are demanded as a routine.

Dosi (1988, p.1128) defines a technological trajectory as "the activity of technological process along the economic and technological trade-offs defined by a paradigm". For example the aircraft industry is characterised by trade-offs between horsepower, cruise speed, gross take-off weight and wing loading. Increasingly to manage these trade-offs requires a wide network position in terms of relationships to find these technologies but also a "heavy" network position in terms of many strong relationships to allow joint development and subsequent exploitation.

[5] Marcus Brauchli wrote his seminal article "cups run over in the industrial world" in the Wall Street Journal in 1998

One of the underlying themes of Dosi's work is that innovation comes via design improvements, by learning by doing, and by learning by using. Most of all it comes through "connections" plus an open mind. In the area of microelectronics Dosi sees an excellent example to "illustrate the complex intersectional linkages in the innovative process". What is more he suggests that relationships which may not involve an economic transaction may have importance. He calls these "arms length" relationships which may link producers and users, or actors in other networks. An example would be the way in which the production of shotguns provided technology for the development of bicycles in the late 19th century. It is concluded that a "structured" set of external relationships are beneficial to innovation, and as Teece (1982) and Pavitt (1986) state these develop into forms of consistent patterns linking "different technologies and industries".

There are many network aspects to this thought process. First it leads to the concept of knowledge spill-over, which is mostly described with regard to local industrial networks but has wider relevance and value in the context of different industries and technological areas, from which it flows into the area of bench-marking.

Dosi argues that since innovation and imitation continuously change the firm's relative performance the "dynamics of industrial structures" are always on the move. Effectively he is saying that innovation and networks do go hand in hand, and he accepts that industrial "webs" or "filieres" are significant in the diffusion of new technologies (Dosi 1988, p.1147). The term filiere, which in French means thread or chain, was coined to look at the supply chain related to a particular commodity or product and evolved into one of the methods of examining the value chain (Duruflé, G., et. al., 1988) being liked as it accepts a wider ensemble than just the straight line of a chain.

Dose explains that the further back in the filiere a company is situated the more its interests may change. For example Intel concerns itself more with the technology and less with the application. This is as a result of it being situated quite far back in the filiere. In consequence the filiere view helps give us a technological definition of a network picture.

At the same time Dose was unable to find a "representative firm" that could be latched onto as the format for successful innovation over time. What he did conclude was that the firms' behaviour evolved out of the "processes which created them". As with the resource based theory a company's likelihood to innovate or not, its willingness to diversify or not, or even its willingness to grow large or not may derive "from the variegated nature of the evolutionary processes that generated them" (Dosi 1988, p.1163).

2.12 Research Objectives

Given that there have been many studies of the development of businesses and of the associated networks what is missing is an extended study over a very long period of time. Taking the argument of Dosi (1988) that the company's current capabilities are hugely determined by its long term history understanding what constitutes that long term development becomes essential. What is more doing so with the tools of the IMP Network approach should allow us to better evaluate the processes involved and the outcomes from them. Using correspondence and other material offer an ability to gain thorough impressions of the network pictures of the major actors, while the purposeful networking and interactions can be adjudged with the 6Cs.

While the IMP Network approach has done many shorter studies it has not taken into account the advice coming from the non-IMP fields that highlight a clear need for a truly long term network case study.

2.13 Concluding remarks

Examination of a wide number of aspects of the IMP Group approach to networks and the additional areas of limited aspects of strategy along with economic and business history make it clear that business events unfold over quite lengthy periods. The studies over the last four decades into the relationships companies have with each other have led to an increased understanding of the way in which any individual business exists within a network or a number of overlapping networks. The sheer complexity and extent of these relationships makes it clear that companies are never able to fully control events. A company which understands these limits and both watches and estimates the interactions going on elsewhere in its networks is likely to do better than one who does not.

Clearly it is important for a company to be aware of the nature of the networks within which it is embedded and to have considered the ways in which various events might create changes in the network. The company has then a better chance to take actions appropriate to improving its position.

The papers on digital imaging by Lundgren (1995) and on IKEA by Håkansson and Waluszewski (2002) pick out a number of different points which indicate how valuable studies on the longer term evolution of networks might be to both the academic and the industrialist in understanding the dynamics and evolution of the networks and recent work on networks pictures and the tools to use to interrogate interaction are indicative of the significance of this area.

In looking at the current knowledge of networks from a variety of aspects it is clear that the literature requires a useful long terms study to identify if insights can be gleaned from observing the very long term events that span decades rather than years. At a time when many businesses in the digital world – MySpace might be typical – have very short life cycles the comparison with the many great brands that have survived so much longer is an area of great potential.

The next Chapter explains the research philosophy and methodology which will be used for this thesis.

3.0 The Research Method

3.1 Introduction

In this chapter we consider the ontology and epistemology along with the methodology that has been used. The use of case studies, the choice of case study and the analysis will be explained. Finally we look at potential issues of research quality and the limitations involved in the approach that has been used.

3.2 Research Philosophy

Gerring (2004, p.351) describes ontology as a vision of the world as it really is, a more or less coherent set of assumptions about how the world works. In this situation we start from the standpoint that networks do exist, and indeed, have always existed. Easton (1995) introduced the realism approach to the IMP studies mainly to support the use of case studies (e.g. Harrison & Easton, 1998) as well as the search for underlying mechanisms in networks (e.g. Harrison & Easton, 1999). This approach has become the pervasive ontological orientation of IMP researchers due to the pervasive belief in IMP work that reality is constructed based on the network bonds and activities ties between actors. The IMP approach assumes this realistic ontology, drawing on both subjective or objective orientations (Moller, 1994). Following this tradition this thesis also follows a realist ontology drawing on a belief in a subjective reality created by those actors operating within that reality.

This realist ontology is understandable in an IMP tradition by researchers exploring the actors interpretations of realities (Easton, 1995), or as we have termed in this thesis the “Network Pictures” (Ford et al., 2003). As such an IMP world view directs researcher to an

interpretivist epistemology where an understanding of a subjective reality can be exposed through comparing and contrasting multiple actors' interpretations of their reality. It is accepted that the interpretive view can create problems in deciding how one interpretation is better than another (Easton, 2010). Historians argue that the past decides the future but the problem is that there are too many interpretations of the past. Researchers therefore try to identify areas of ambiguity and highlight them.

This makes it logical for most case study researchers to work from an interpretive epistemology (Gall, et.al. 1966), in which understanding "the meaning of a process or experience constitutes the knowledge to be gained from an inductive, hypothesis- or theory-generating mode of inquiry, rather than a deductive, hypothesis- or theory-testing mode" (Merriam, 1998, p.34). Merriam (1998, p.33) points out that a "Case study is a particularly suitable design if you are interested in process". It allows for detailed monitoring of the collaborative process (Merriam, 1998) and it is suitable in this instance to look at the evolution and the dynamics of the networks.

The approach addresses the challenges involved in studying processes that unfold over long time periods. The theoretical framework chosen to address the empirical phenomenon is rooted in the IMP approach (see e.g. Håkansson, Ford, Gadde, Snehota, & Waluszewski, 2009) working from the basic assumption of companies as interdependent and interacting with other companies.

3.3 Using Historical Case studies

Taking a subjective orientation in relation to methodology, the IMP approach relies on understanding industrial systems as complex networks of organisational relationships and to prepare and nurture

managers to integrate network thinking into their everyday practices. It traditionally adopts an inductive, interpretative and idiographic methodology. Deeply descriptive Case Studies and intensive use of secondary data as used in this dissertation are the predominant research methods.

Yin's view of a case study as an empirical enquiry suggests it is useful "when the boundaries between phenomenon and context are not clearly evident" (Yin, 1994, p.13). Yin notes that case studies are especially good for answering the how and why questions related to events. Further case study research is used for a broad spectrum of purposes including the descriptive, exploratory, and explanatory. Descriptive case studies should not be used simply to describe everything: there is a need for careful selectivity to achieve the goals of the study. So selectivity is a major issue because individual pictures will always be just that.

Halinen and Törnroos (2005) distinguish four major challenges of case research for research on industrial networks which are further analysed in Aaboen et.al. (2012): these are network boundaries, complexity, time, and the problem of case comparison. It can be argued that every case study approach must offer 'solutions' to these problems. The problem of network boundaries exists because networks of connected relationships extend infinitely, which makes any network boundary arbitrary. The issue of complexity is associated with structure and embeddedness (Halinen and Törnroos, 2005), and to describing a network with all its actors and the complexities of the links between them.

Time is always relevant because industrial networks are subject to constant change so valid descriptions of network processes require an incorporation of time.

The theoretical grounding of the industrial network approach has mainly been developed on the basis of a large number of in-depth single case studies permitting thorough description and analysis of network processes and structures (see e.g. Baraldi, 2003; Gressetvold, 2004; Håkansson & Waluszewski, 2002; Holmen, 2001; Lind, 2006; Lundgren, 1995; Wedin, 2001). However the problem of case comparisons arises because each network case is unique and therefore it can be difficult to compare one case with another.

The IMP approach is based upon the fact that dyadic relationships do not stand alone, and that each company, or actor, has multiple relationships. These are likely to progress in such a way that even if the focal company wished to stand still its position will alter as the other relationships in the network weaken and strengthen. Consequently the analysis of this "network" will be an interpretative view (Henders, 1992; Welch et. al., 2002). Events, and with them relationships within a network, are difficult to predict and very dynamic. They are strongly dependent on context (Hagg & Johanson, 1988). Context has a number of aspects as there is the wider context of events outside the network as well as the context of the network itself to be considered. In this regard the explanation is most important in this dissertation.

As well as being descriptive and explanatory the approach is qualitative. "The scientist practitioner who "grounds" his or her theories or models of organisational life in interpretative or experiential data is operating fundamentally within the qualitative paradigm." (Brewerton and Millward, 2001, p.12) After some years of argument it is now accepted that qualitative science is a sound means of generating knowledge.

A case study is often justified by the fact that careful analysis can offer interesting insights. This approach accepts that businesses exist

as do the networks and relationships which create such networks and our questions looks at what causes the network outcomes observed in a variety of episodes each with somewhat different contexts. From this we answer our questions as to how the business networks evolve and whether this is a useful approach to examining a business or set of businesses over time.

3.4 The Single Case Study

George and Bennett (2005) note the increasing interested in using historical case studies and value the logic of historical explanation. Their argument is that the case study approach allows the detailed examination of an aspect of an historical episode to "develop or test historical explanations that may be generalisable to other events." George and Bennett (2005, p.4). Single subject case studies involve the systematic evaluation of change in individual cases.

A single case study approach enables a more in depth examination. The information it yields can be rich and enlightening and may provide new leads or raise questions that otherwise might never have been asked. George and Bennett (2005, p.9) support the view that case study methods add value particularly when used in the development of typological theories and are good at exploring many of these aspects of complex causality such as we expect to find within the networks. This fits with the current growth in interest in modelling and assessing complex causal relations, such as path dependence, tipping points, and multiple interaction effects.

It is in his study of the Clyde shipyards in the 19th century that Schwerin (2004) uses historic records to examine in detail the way relationships evolve. In doing so he identifies the potential value of re-examining old records which are rich in narrative and points towards the value and importance of doing so with a network perspective.

Texts on single industries or even companies help us understand network positions in ways not always easily picked up elsewhere. That is by examining both the social and the technical changes going on during the period. In this dissertation some leather industries texts help to give context for the technical changes and help in the understanding of how sourcing and industry location in particular change with time.

Dosi (1988) asserts that historical case studies of a business or even an industry are based on stories with empirical conclusions which mostly serve to highlight the highly individual situation of those companies and industries. Nevertheless they provide a rich source of well-researched material. Every indication is that if we apply network theory to these we can throw light on how companies viewed and managed their position within the network when faced with major events such as political, economic, social and technical change, along with equally important areas such as generation change.

3.5 Choice of Case Study

Given that in order to obtain a true feel for the evolution of both innovation and the various network positions in which a company may find itself, a long study is required. To look at a business situation over many decades requires that we delve into history.

It is necessary to find material which is complete, relevant and accessible. The time period, regional areas and companies looked at in detail chosen for this study offered the following criteria:

1. - A period that allows study of a number of different types of events that will impact a business network in a variety of ways. These

include technological, economic, political and social changes plus aspects of generational changes in management.
2. - Adequate rich biographical documentation of the individual companies from which to deduce networks that are more than lists of companies with which they had financial transactions
3. - Sufficient contextual material to be able to assess the impact on the 'iterative business activity' (Pearson and Richardson (2003)).

It is recognised that the study of economic geography owes much of its academic origins to the work of Hoover (1937, 1948) on the New England leather and footwear industry. The development of this industry in the period of rapid US population growth, industrialisation and internationalisation is well recorded. The Booth Group of Liverpool and New York were a major element in the development of this industry and as well as good archival material being available the author has been given access to privately held company and family material which permits analysis of how the managers viewed their relationships with other actors in the networks.

The industry case study used is based around the Liverpool leather company Booths and the global networks of which the company was a part. Booths were in business in Liverpool as international traders from the late 18th century but in the 1860s entered a new business era. The business thrived until the mid 20th century but was taken over in the 1970's and largely closed down over the subsequent two decades. Only very small parts have survived into the 21st century.

The primary documents used were the founding partners' letters. Some of these were available in their original format and some via family biographies and the company history. The founding partner of the Company was Charles Booth who was a prodigious writer and would regularly write to his wife and to his business partner. Charles Booth subsequently produced an influential survey into Life and

Labour in London (1886-1903). As a result of the fame he achieved from this his wife donated his letters and papers to the University of London on his death and this archive is now fully accessible at the LSE. His great grand children, other family members and many of the later employees of the company hold other material which was made available. Other family papers are held in the University Library at Liverpool University although refurbishment at that location has meant that only very limited use has been made of these and full examination must await a later date.

The partners' letters were extensive: "When Alfred Booth and Company was founded, long letters were written by the two brothers almost every day. In the tradition of mercantile correspondence, they contained not only business matters, comments on contemporaries and customers, but also long statements on political events in England and America" (John, 1959, p. 47). Other materials included company newsletters which partially replaced the partners' letters when the company grew in size.

In addition there were available:

a. Company papers
b. Trade Press reports
c. National and local press from the period
d. Papers from other companies in the sector
e. Academic studies covering the industry of the time
f. Private family papers and interviews with current family members

The period examined runs from 1860 through to 1930, with some limited examination of the earlier years to provide background.

During the 19th and early 20th century it was quite common for the owners to mark a key moment, perhaps a significant anniversary or the opening of a new Headquarters by the commissioning of a

company history. John (1959) on the Booth Group and some of the books on Quaker businesses (e.g. Matthews and Tuke, 1926) fall into this category. These books are often written by journalists or historians and are well researched, having access to the papers and comments of senior and knowledgeable family and company members. These texts can provide rich material that is a mix of narrative and analysis helpful in explaining management thinking at the time. These comments aid the assessment of the positions the company held within the network and the importance with which the company viewed some of its relationships. John (1959) has been used extensively in this dissertation, illuminated with notes on discussion with the last Managing Director of the Booth Group and advice from the current Booth family members.

Contextual material and data for additional associated episodes come from an examination of the United States Leather Company and selected areas of the more traditional British Leather Industry. The UK trade press and the US local and national press reported the industry extensively during the period and where accessible these records have been used.

The company was involved in some of the most significant technical developments in the history of the leather industry, evolving from a trading only business to become one of the largest tanning groups in the world, and extending its reach to Africa, Latin America and Asia in the search of raw materials. The business started as a partnership with an American and then became wholly owned by the Booths moving through a number of iterations before, more than one hundred years on, becoming a publicly traded company on the London Stock exchange, still managed by the family. A number of areas about the company are well documented. Its roll in New York was significant and brought them into well documented contact with the other tanners in the city who were mostly rich and famous families. As a

consequence it is possible to put the Booth Company in context with a number of these families through writings of the period.

Many of the tanneries owned by old established New York families were put together in 1893 to form the largest joint stock company in the US and one of the DOW Jones Industrial Average twelve founding companies in 1996[6]. The United States Leather Company, incorporating some 80 tanning companies is fully documented in primary and secondary sources. This development had significant impact throughout the industry.

The leather industry has always been important in war, and until modern transportation this was for horse furniture and saddlery as much as for boots and gloves. Since one of the Booths was appointed Deputy Director General of Munitions Supply in the Great War the impact of War on the leather industry was in some ways increased. The sinking of the Lusitania was caused when information was leaked that a cargo of Booth sheepskins were really armaments. Some senior Booth staff died on the Lusitania. Again this has created a large amount of primary and secondary material.

The period of detailed study runs from the death of elder Charles Booth (father of the founder Charles and his brother Alfred) in 1860 until 1930 when the company had steadied and started to grow after the First World War. The death of their father the elder Charles Booth provoked the sons into a start up in leather in 1860 and then a move into shipping in 1864. The takeover of Kent and Stevens Tannery in 1978 marked a major change in the structure of the group and the start of a period of technical innovation in the leather trade that was to run until the mid 1890s by which time they would have the most significant kid leather tannery in the world using an entirely novel process. From 1895 until 1930 we see the transfer of the business

[6] http://stocks.us/Dow-Jones-Industrial-Average.html (Dec, 2010)

into the next generation, the death of the two founding brothers and the globalisation of the business under the hands of the new senior partner George Booth.

3.6 Analysis

To assist in identifying the various events during this period a timeline has been developed to cover this period. Time lines can form useful scaffolding in the research process in terms of interrelating complex trends and networking activities. The timeline is built up from family, company, industry and other data including economic and political information. There is a holistic element here, in line with what is described as "total history" which evolved in the Annales School in France in the early 20th century (Burke, 1990). From this we can develop a listing of sequential observations of the network and look at interactivity by picking out instances and examples in time.

According to Weick (1995, p.128) "sequence is the source of sense" when discussing storytelling and there is a heavy element of story gathering from the sources mentioned.

Easton (2004) notes that net social capital resides within the actors in the network, and being diffused across the network can be called upon by any member as required. The timeline is used to look for this at how resources and social capital are shared over time, to help ensure that the context is as clear as possible, the sequence of events is correct and in particular to help identify episodes which might usefully be interrogated in more detail. Being thorough with regard to context is a major recommendation of Araujo and Easton (2012).

One of the major concerns (Brewerton and Millward, 2001) is for authenticity and completeness. The use of partners' letters as a rich

source of material from which to recreate network pictures recreates the approach of Schwerin (2004) and the additional papers provide context and meaning to events.

Amongst these is Hoover's (1937) study of the economic geography of the leather and footwear industry of New England which is considered as founding that discipline and covers the period when Booths were at their height in the region. In addition to Hoover's work is the library of historic documents covering the period about which he writes. There are a wide variety of such documents, especially for the New England area where there has been some enthusiasm to retain historic records. Some documents cover individual companies, some individual factories and some cover the history of an industry, with many being supported by original documentation held in public libraries or private collections. Many such documents are used to provide the contextual background in Chapter 5.

The analysis of the case study provides a detailed description of the case and its setting (Cresswell, 1998). The material is broken into four main segments covering the

1. Starting period of the company,
2. The subsequent start of the shipping line,
3. The major period of transformation and growth of the business,
4. The later years.

The two start-up periods involve considerable amounts of network activity as the company identifies partners. This intense networking is well documented and the analysis allows consideration of the long term implications of the relationships developed. In both instances the company is establishing itself as a new business within existing networks and these two episodes are preliminaries for the main examination in episodes 3 and 4.

The third period includes the two areas of the growth of the firm and the reaction to major innovations, while the final element covers the transfer of the business between generations and its continued expansion into new area. By separating the episodes in this way we can interrogate individual phenomena using the methodology chosen as well as see the bigger long term picture.

Additional material on the industry at the time in particular the one other very large tanning company, The United States Leather Company, is provided to aid with the area of industry context. This is presented as a short case study being more anecdotal and written by Dewing (1911) and Donham (1930) with additional associated material from Norcross (1901) and Watson (1950).

Each episode is analysed in detail.

This is done incorporating the A-R-A model with the aid of the drawing of network pictures which are used as a tool to envisage how individual actors may have viewed their network position. This picturing of a single business and surrounding leather network over the period is used to assist in interpreting the dynamics of the business as well as the development of the overall network. The network pictures help to trace longitudinally the development of the "whole" network, and to relate network pictures to the study of evolution and dynamics in business networks.

The caution which is required when drawing network pictures is highlighted in Pearson and Richardson (2001) who use a network approach to look as matters around the time of the Industrial Revolution.

In the exchange following a negative response from Wilson and Popp (2003) argues that there is an over-dependence on drawing networks

using only formal company documents and risking missing the impact of non transactional relationships and other matters at the periphery of the network. "…It seems clear that these sets of people have been identified as networks a priori, rather than as a result of any analysis of 'iterative' business processes unfolding over historical time. Networks thus identified must inevitably seem rather more bounded than permeable and more static than dynamic." A riposte from the original authors (Pearson and Richardson, 2003) redressed the balance agreeing on the approach needed to develop meaningful network pictures. "We did not deduce networks from stock companies' by-laws but gleaned evidence of 'network linkages' from biographical documentation of the individual company directors." Effectively they made use of company correspondence, diaries and other rich material such as internal company newsletters in order to build estimations of the network pictures management was building as they took decisions.

Schwerin (2004) analyses the dynamics of innovation and institutional change in Clyde shipbuilding. During the nineteenth century shipbuilding transformed into a modern high-tech industry, driven by emerging innovation systems in regions such as the Clyde. His paper, based on newly evaluated archive materials, identifies several overlapping channels of information exchange within the shipbuilders' network. From a dynamic perspective, it discloses changes in the pattern of individual and organizational behaviour. Moreover, it establishes the importance of 'correctly' mixing formal and informal institutions in an analysis and describes the link between these institutions and the geographical size and evolution of the innovation system.

Schwerin (2004) uses the extensive letters and papers of the main business leaders and the minutes of their meetings on product development with other bodies such as the University to get beyond

the transactional linkages and look at the other interactions in the network. The approach of Schwerin, largely adopted in this dissertation, using the much more wide ranging information from the correspondence and diaries of key actors should avoid any danger of creating network pictures which are too bounded and should give insights which offer transferability to other situations.

The Three Network Paradoxes and the 6Cs are used to look at relationships within networks and allow some discovery of inflections or changes which otherwise might be missed. The analysis also uses the inherent paradoxes of networks (Håkansson and Ford 2002; Ford et. al. 2003, p 184) and it relates this evolution to current and emerging ideas on the dynamics of business networks, including the 'Model of Management in Networks' (Ford et. al., 2003). The first paradox essentially relates to working with existing relationships, the second with the management of the current position and the third with strategies about how to network. (Corsaro et. al., 2011)

Useful in examining interactions and the dynamics of what is happening within the networks are the four aspects of networking:

1. Subjective Interpretation,
2. Relativity
3. Interdependence
4. Jointness

As well as an individual examination of each period a separate analysis is undertaken of innovation throughout the time period of the case study allowing a full examination of the many steps involved.

It is the importance of observation over a long period of time which is central to this research paper. It is difficult to delimit events in time, and to be able to define a beginning and an end. The long term case

study is intended to help us with this as well as to examine the consequences of subjective interpretation and the way these flow through jointness, inter-dependencies and relativity within the network. The time period is sufficient to observe a large number of different economic, technical, political and social episodes. These involve such events as the price of gold and currencies, a number of new technologies, expanding raw material supplies, and war. Each of the actors felt the changes and takes a view of their implications and how they consider other actors will view them. So in part we are looking at the inter-connection between the network pictures and the events in the greater world. Certain types of events bring some groups of actors closer together while some make them move apart. In some instances they come together to fight for certain benefits or protections while in others they may choose a joint venture or major process adaptation. This may be the result of a need for resources such as time, money, personnel or technologies.

3.7 Addressing Research Quality

Although a very long term case study and a historical one this study involves many of the problems found in more contemporary studies. What to include and what not to include; difference in interpretation between researcher and actor; and recognising that the identity of the unit of analysis is itself subject to evolution all create potential issues.

By placing the detailed information from the letters and other qualitative material in the context of wider, well documented events, and examining them rigorously using the tools described errors in the interpretation can be diminished, if not fully eliminated. The analysis and insights developed can be views as trustworthy and transferable.

Some of the difficulties with studies of this sort relate to geography. Schwerin (2004) does cover the relationships the shipbuilders hold

with the Ministry of Defence, and with technological and competitor developments elsewhere, but his study is essentially one of the Clyde Valley. Pearson and Richardson are studying insurance in selected towns in the north of England. Their "networks" display many elements of what we would describe as "network theory" but more of "local area clusters". In the opinion of Gordon and McCann (2000, 2003) many of these local "networks" are communities which benefit more from agglomeration effects of being in one locality and are not really specialist sector related networks.

While this case study is not compromised by being geographically bounded it is limited by being essentially restricted to one industry, which will mean that comparison with other industries will have to be made with care.

Amongst the wide range of sources the letters and papers held in Liverpool University Library form an important element. This library was undergoing a major refurbishment during the period of data collection and as a consequence not all the papers read were fully referenced and this is apparent in both chapters 4 and 6. It also means that for references in these chapters a greater reliance has been made of John (1959) to provide references for these papers.

3.8 Concluding Remarks

This dissertation is an interpretive study based on a single case study. A long term case study is required to achieve the research objectives.

The case chosen offers sufficient material of a quality to analyse the evolution of the business in relationship to a wide variety of actors in

many networks, in areas and during times that new technologies both incremental and disruptive were making their impact on events.

The dissertation is based on the letters written by Charles and Alfred Booth the founders and partners of Booth and Company. In many instances the actual letters are available and in others they are heavily quoted in the company history (John 1959) and books published by Mary Booth (1918) and Duncan Crow (1965). Other contemporary material from company records, the trade and national press and industry sources are also used to ensure reliability. A large amount of contemporary material is now available, particularly in the USA, which allows the examination of the position of many actors in the leather network.

This approach using the much more wide ranging information from the correspondence and diaries of key actors should avoid any danger of creating network pictures which are too bounded and should give insights which offer some transferability to other situations.

4.0 Booth and Company from 1860 to 1920

4.1 Introduction

This section examines in details the periods of development of Booth and Company. We start with a preamble which explains how the founding brothers were integrated into pre-existing family networks which provided resources and linkages into a number of business areas. Four further episodes are discussed; covering the founding of the leather business in 1860 and its early years until 1865, the founding of the shipping business in 1864 and its early years, the period of leather innovation from 1878 and the consolidation and globalisation of the business from 1890 onwards. The first two episodes covering the starting of the leather and then the shipping business are laid out by way of scene setters for the final two episodes although they both highlight the importance of social and negotiated networks in building an international business at the time.

Each episode is followed by a discussion and analysis examining the network evolution and the dynamics involved in terms of subjective interpretation, relativity, interdependence and jointness.

The long term case study is intended to aid in assessing elements which take a long time to develop and a final section of discussion is added to cover innovation and technology.

4.2 Preamble

The foundations of the Booth Group go back into the last decades of the 18th century. Thomas Booth left the family farm near Warrington when he was eighteen years old and in less than ten years had

established himself as a successful Liverpool corn merchant.[7] By 1789 he was representing the Liverpool corn merchants at the Board of Trade. As was normal at the time with corn merchants he owned and ran a number of ships to carry grain along the coast and overseas. Their largest ship was the "Esther" which in 1798 was registered with Lloyds as being of 210 tons and carrying six guns. It was used to trade in the Baltic.

In 1829 Charles Booth, his third son, along with his brother Thomas took over the grain business while their other brothers all did well in public life, James with the Board of Trade and two Henrys in the steam railway business as inventors, engineers, managers and commentators.

At this time society split into the Nonconformist families and the Whig, Anglican families. The more radical group of Nonconformists was the Unitarians who were increasingly important in the UK during the late 1820s and through the 1830s. The Booths had left the old Presbyterian Church in the late 18th century and moved to the Unitarians and Thomas and George Booth were founder members of the Renshaw Street Chapel in Liverpool in 1811.

Contemporary papers talk of the families lined up in their carriages in Renshaw Street outside the Chapel after Sunday services. "A long line of carriage-and-pairs awaiting the exit from the Chapel of Rathbones, Holts, Brunners, Tates, Jones, Thornleys, Mellys, Hollands and Gairs, their stately locomotion to and from Chapel on a Sunday morning being then one of the sights of Liverpool".[8] It was usual for there to be inter-marriage between the different Chapel families and this happened with the Booths. The most relevant relationship in this

[7] Norman-Butler 1972, p30
[8] Jacks, 1942, p141

regard was the marriage of their daughter Anna to Philip Holt who founded the Holt shipping line, the Ocean Shipping Company.

4.3 Episode 1: Starting in the leather industry 1860-1865

While the company itself began in 1860 one might say that this dissertation effectively begins in the 1850s' sitting room of the Booth family home in Liverpool where the senior Booths, their elder children including Alfred, and members of the Holt and Lamport families gathered to discuss the future. The Booths had realized that their business as corn merchants was no longer likely to bring in reasonable profit. Like other medium sized grain merchants they had suffered considerably from the depression caused by the long fall in prices after the Napoleonic War[9] and by the tax on grain applied to pay off the post war national debt. They had already sold their ships. In discussion with the extended family they decided to educate their two sons Charles and Alfred in international trading and shipping, using family friends in their tightly knit nonconformist, Unitarian society to place them in suitable positions. The business of corn would be terminated.

Alfred was born in 1834 and educated at the Liverpool Mechanics Institute and then at Edgbaston Proprietary School. His brother Charles was born on the 30th of March 1840. Charles Booth is most famous today for his philanthropic work in London and he was the driving force behind the introduction of the universal old age pension in January 1908. He was honoured for the latter by the House of Commons in 1909: "to you more than any man this first installment to the aged is due."[10] Both were the sons of Charles Booth and Emily Fletcher. Charles Booth had married Emily in 1829 and she was the daughter of a West Indian merchant who was also a Unitarian philanthropist.

[9] John, 1959 p.22
[10] Norman-Butler 1972, p.227

Charles went to the Royal Institution School in Liverpool, undistinguished other than in arithmetic and then was trained at Lamport and Holt's merchant house starting at the age of sixteen. Alfred had been apprenticed to Lamport and Holt in 1850 and this was the moment when the family started on the journey that was to build the skills and access to the resources needed for them to enter the leather industry a decade later. Mr Lamport, a senior partner, was second cousin to their father and Lamport and Holt did a lot of work in the Mediterranean. During the 1950s he was beginning to replace sailing ships with steam.

In 1857 Alfred, aged 23, finished his apprenticeship with Holts and went to New York to work temporarily in the New York office of Rathbone and Company. Rathbone was one of the biggest Liverpool Trading companies and had offices throughout the world, including places like Shanghai and Canton. The two managers of Rathbones in New York were also members of the Renshaw Street Chapel and one of them, William Lidderdale was later to become Governor of the Bank of England and to deal successfully with the first Baring crisis in 1890. The idea was that Alfred would spend two years there deciding on his future. We know he turned down one good job offer with Thornleys the cotton trading business before agreeing a one year extension with Rathbones.

We do not know how involved Charles and Alfred were in the decisions being made about their own futures back around 1850. Looking back the activities Charles undertook later in life suggest he may have preferred an alternate career, such as becoming an academic. Yet there is no indication in any correspondence that suggests other than full support for the decisions made about their early training. If anything what we do know indicates that the discussions were open and frank. We are also relatively certain that this was not a male only

environment of discussion but that the wives and daughters were important contributors.

By the time Alfred went to New York his brother Charles had also followed him into Lamport and Holt where he had soon "taken to office work uncommonly well" according to his father's letters. During his extended year with Rathbones Alfred started to plan setting up in business independently although matters were upset by the unexpected death of his father in 1860.

The elder Charles Booth (1799-1860) died in the February of that year and it was time for the two sons to make their own way in business. On his death elder Charles Booth left legacies to the children Anna, Alfred, Charles, Emily, and Thomas Booth which are most accurately put at £14,000, although some reports place them as up to £20,000 for each child. It may be that the £14,000 was an extra amount put aside to fund the new business. The outcome was that later in 1860 Alfred set up the Booth Company as a joint venture in New York with an office in 57 Broad Street, New York.

What Alfred Booth established was a business that based primarily around importing English light leather (skins from sheep and goat rather than hides from cattle) into the USA. The office was not placed in the traditional tanning area in New York (the Swamp) but nearer the docks in 57 Broad Street where they also rented a showroom. The initial office was in a basement due to the high cost of rents and the basement tradition was largely to remain with Booths in the USA until the 1980s.

The family papers indicate that the leather industry was chosen as it offered good growth but slipped below the radar of the major trading houses. To assist entering a market in which they had no obvious previous expertise that we are aware of they chose a local partner in

the USA. This was a local leather expert Mr Charles Walden about whom we know very little. The business was called Walden & Booth and quickly became an established part of the New York Leather industry.

The plan was to "establish a merchant house primarily for the import of English light leather into the USA."[11] Additionally an agency for Alfred and Philip Holt was taken on to help with cash flow and perhaps their location nearer the docks is explained by the work for this shipping company whose steamers traded between New York, Liverpool and the West Indies.

The move was actually quite rushed after the death of Charles. Alfred, then 26, had indicated in his letters that he did not want to stay in New York and in turning down the offer of a partnership in cotton broking agreed only to stay an extra year with Rathbones. The idea was that Walden would do most of the US work while Alfred would set up things in Liverpool and move back and forward. As it happened after the death of his father in 1860 Alfred spent even more time in the UK than was expected sorting out family affairs.

Charles had gone off on a personal tour of Turkey and the Middle East in September 1860 and went to New York late in 1862. It was then that they discovered that Walden was becoming ill. In January 1863 Walden's health deteriorated and he was confined to a sanatorium. The two brothers had to move forward on their own and they decided this would be their careers. The business became known as Alfred Booth and Company Liverpool and Booth and Company, New York. An office was opened in 5 India Buildings, Liverpool.

The new business was also impacted by the start of the American Civil War which ran from 1861 to 1865. Unlike most Liverpool city

[11] John, 1959 p.25

merchants both Alfred and Charles preferred the North and opposed the support given by Europe, including the city of Liverpool, to the 1863 Confederate Loan. William Rathbone also wrote at the time that the support of the loan by the UK (along with France and the Netherlands) was “a disgrace to this country.”

The leather business for Booths was initially a commission business dealing principally in skins and leather. It is said that the energy and enthusiasm which Charles brought to the business quickly led him to become the leading figure in the partnership, although the name of the firm remained as Alfred Booth and Company. It was during these years that he developed the foundations of his business methods, reflections of which would be later observed in his approach to social investigation.

In 1863 they were working with capital of £14000 plus credit facilities offered by Alfred and Philip Holt, Rathbone and Company and Lamport and Holt, and buying skins from the UK worth £2500 a month.

Two types of leather were initially imported. One was vegetable (sumac) tanned sheepskins primarily for the footwear industry. These were used in shoe uppers where they were thinner and more supple than cattle hide leather although less durable. They also imported what they called “splits” or the grain upper parts of sheepskins in the pickle stage. Today these are called skivers or chamois grains and the bottom part of the skin is retained to be tanned with cod oil into chamois leather. These pickled grains were not tanned but de-woolled and split before being preserved in acid and salt, which kept them in good condition indefinitely. The grain or upper part was to be made into gloves and handbags although for gloves it was certainly not the perfect raw material.

We do not know how the Booths went about looking for UK suppliers but they quickly built relationships with tanners in Bermondsey for sumac leather and for the split grains they used three companies:

1. Turneys in Trent Bridge, Nottingham
2. Boots of Leicester
3. Johnstone in Bootle

Tanners to this day discuss the "problem of the hundred skins" meaning that within every batch of leather there are to be found grades which are hard to sell. With their limited experience each of the early shipments led to some difficult stock being left on the shelves in New York.

As a consequence the brothers worried that the business of leather was not going to suffice and also looked in other directions. They spent £700 buying into the Weed Sewing Machine Company in the US. They tried unsuccessfully to sell this machinery into the UK but gave up in 1864. They also did some foodstuffs trading between 1862 and 1864 but then discovered it had yielded a net loss of £185. In 1864 Holts sold their West Indian Line to the West Indian and Pacific Steamship Company and Booths lost this agency business. This jolt appears to have returned the focus to leather.

Learning about leather was complex and Charles wrote in a letter to his brother "I was never able to tell whether the skins were right or not and Turney could always shut me up" and Alfred replied "shall we go and try our fortunes in the Antipodes or join Robert Crompton sheep farming in La Plata?"[12] Charles indicated that he had never imagined they would have had to lose money to gain experience but was determined to sharpen his focus and carry on.

[12] John, 1959, p.29

His papers indicate that "after an early shock at the real cost in capital terms that gaining experience in the business has demanded",[13] Charles Booth instigated the practice of system and order in the handling of the firm's affairs and took it upon himself to master the details of the trade. He visited tanneries, inspected cargoes of skins, and gathered volumes of information summarised into facts and figures. Associates sometimes balked at the quantities of detail he required from them, but the habit clearly served him well and the business prospered. (Booth Online Archives)

"We must put an end to this sloppy brotherly way of doing business or we shall pay dearly for it. The lazy impulse not to think how a thing will be, but to leave everything to the other won't do"[14] Charles wrote to in 1866. John (1959, p.30) considered that Charles liked to follow a technique in "the conduct of affairs" that involved the analysis of broad trends, as "shown by statistical evidence and the creation of an organization by which the emerging pattern of wants could be met."

Fortunately 1865 was a good year for the Booth sheep business and they made a solid profit. Some of the companies whose goods they sold in the US worked on a consignment basis so Booth took their fees and commissions but did not finance the goods. The brothers decided to approach all their UK clients to see if they would agree a similar arrangement. All did so and most pleasing was the support from Turneys of Trent Bridge Nottingham who had become their most important supplier. The deal made was to advance five-sixths of the cost of the invoice value, by the acceptance of a three or four month bill of exchange, and to charge a commission of 5% in addition to the costs involved in transport.[15]

[13] Booth Online Archive - a biography http://booth.lse.ac.uk/static/a/2.html (accessed November 2012)
[14] John 1959, p.31
[15] John, 1959, p. 36

In this five year period we see the Booths working in a number of networks. Their family and chapel network brought them into contact with the overlapping networks of banking, shipping and trading. Through the work in the US Alfred made links in to the US leather business and having defined their needs he made contacts with a group of suppliers from the UK. Many new relationships were developed very quickly and trusted businesses with known resources structured into the relationship to reduce uncertainty in many areas. While both the UK and the USA had existing leather networks that inter-reacted fairly well it was the Booths who brought the two together, using the skills and resources from their training and other relationships to create a transatlantic network.

4.4 Consideration of Episode 1.

A new business does not start with a blank sheet. In the same way that networks pre-exist any single new entry (Ritter, 2000; Ritter and Gemunden, 2003), so each new entry brings with it its own history. Thus an actor can hardly ever be said to "enter" a network completely from the outside. Thus the Booth family used an existing relationship to apprentice Charles to a Liverpool trading house where they learned about trading and shipping and Alfred took a temporary post in the New York office of the well-known Liverpool merchant house, Rathbone and Company. In doing this the brothers would have been building up a picture of the networks in which they were interacting and assessing the actors and the technologies involved. Having revised and extended their "network pictures" they would then be estimating both how easy it would be to move into the network as a new member and what would be involved in "networking" within it.

Their first moves would have been delicate. As employees and ex-employees they were already actors in the networks and would have

had to decide how to manoeuvre into the business areas of others without provoking retaliation. The company documentation indicates a decision to set up in the same business, but in a non-confrontational way. Their existing network was already both empowering and restricting their new business, in line with the first network paradox, (Håkansson and Ford 2002).

The Booths established many new relationships in the business start-up phase. These then became part of an organisational structure covering each of the two areas of manufacturing and trading and uniquely, when the two were combined. In its first fifty years the company never lost its strong Liverpool roots and "Chapel Culture". The very large number of relationships which had a similar origin made between actors who held shared beliefs, common backgrounds and of course, religion, had a very strong influence on the evolution of the network and the type of actor-bonds that were developed.

It is apparent that companies work in more than one network and that to analyse them it is necessary to look beyond just a simple "leather industry" or "shipping network". Also the dual dimension of networks in terms of the hard economic/technical and softer/organizational sides is clearly highlighted throughout this first period of the Booth evolution.

Subjective Interpretation

The best overall window we have on events come from the partners' letters but as the business started we have to rely more on the views given by those looking back on events and other formal documents. The most apparent element in the early days of the company was the way in which the discussions mixed a global big picture with fine detail. In this we see a high degree of social context and what might be termed as norms of conduct in the way the Liverpool business and the Chapel communities interacted and communicated. This would

have considerable impact on both the brothers' views of the future and their specific expectations of how other actors would react when they began to be active in the leather trade networks.

The context here is important as it is clear that at the period Liverpool was a centre for global shipping and trade. For many business people the links to New York were much stronger than those to London where the railway had only just started to become an option for faster and safer travel. Also working as a commissioned agent was a quite common area for those involved in industry and commerce at that time. So having taken the decision to start up in business independently and being further spurred into action by their father's death they were able to mix many of the linkages offered by their friends and relationships with quite a global view. In this the brothers were able to build a view of multiple contexts that would surround the interaction taking place – the UK leather network, the US leather network and the transatlantic shipping and trading networks.

The brothers were greatly impacted by ongoing trade events in and around Liverpool and that there would have been considerable reinforcement in terms of their experience and knowledge from their training as well as discussions with family and friends.

They also were able to assess their position and options via making use of the great social capital (Easton, 2004; Ogilvie, 2004) held within their extended social circle. They were able to interact with groups and individuals within this circle to decide on the companies that they should start to build relationships and would offer the resources they would need access to.

Relativity

It is in the area of relativity that much can be learned about the Booths. Very early on we see them with ties into global shipping,

banking and international trading. Many of these were family ties and others came via the family relationships at the Liverpool Chapel. These ties, however loose, remained intact throughout the period and were used quite extensively.

All these links meant that the brothers had many choices to make. They could have stayed in employment rather than starting a new business. They could have started a wide variety of trading businesses. They could have chosen trading or shipping rather than trying to combine both. At the inception of the business they had quite a lot of money to start with and many choices.

As they moved forward and started to interact within the UK and the US leather networks there would be interactions within the existing networks. We do not have records of these but can note that the most successful relationship in leather developed initially was with Turneys in Nottingham which was itself a new company just entering the leather industry. Initially the trade with the more established industry in London was very limited and no major relationships with Booths are recorded there. Relatedness defines capabilities and it was only with the first few relationships in the UK that the Booths had anything to trade into the US.

In the US the leather network entry was via Walden about whom little is known. Yet we do know that New York was the primary centre for leather matters in the US at that time with Gloversville and Boston closely linked to it so it can be fairly surmised that Walden was already in the leather industry as offered an easy route into that network.

Interdependencies

The decisions to start first a leather business and then a shipping business were made. With the establishment of business operations a number of clear dependencies came into being. These included:

a. The three tanners in the UK who supplied the raw material

b. Charles Walden in the US who became their partner and link to the US market

c. Alfred & Philip Holt for shipping fees income in New York

d. Rathbone, Lamport & Holt and Alfred & Philip Holt for providing credit to the business in the early years

Unfortunately we cannot gauge how dependent Charles Walden was on Booths for his livelihood. For the other three sets of relationships it is clear that Booths relied on their partners much more at the start of the business than the partners did on them. The Holts and the Rathbones had sound profitable operations and did not need the Booths. On the other hand it would appear that the Booths were both intelligent and likeable and so quite likely to succeed. Helping them could perhaps be construed as low risk with useful long term potential. These relationships defined the capabilities of the Booths and constrain the use and development of the actor's resources. For example the UK tanners were all new

While hides, skins and leather looked to be a valid venture to enter it was very much a minority trade between the UK and the US at the time so such a move would not be seen as a threat to the activities of the Rathbones and others whose support the family would wish to keep. It does appear that a lot of extended discussion took place in coming to find a market place which offered opportunity without threatening other relationships.

Looking at this in terms of the three aspects of networking is instructive as we see that at the start of the business they take choices that incline to conform with the suggestions and positions of

their future partners and in going about the networking process choose the more passive routes.

There role at this stage is best described as creating their position in the network and they largely conformed with the positions their chosen partners wished and conceded to their wishes as to how matters came together.

Later in this early period they see that the relationships become stronger in business terms they become more equal partners and their contribution is recognized. This is most evident when they wished to change the financing terms for their UK suppliers. In this instance they chose to both confront and to a degree coerce the adaptations out of their partners, albeit they managed to do so without causing any serious upset in the relationships in so doing.

They also had to make many choices when the West Indian shipping route was taken from them, when the Weed Sewing Machine Company, and when they experimented with shipping other materials. In each case they chose to consolidate and simplify matters rather than to look to create alternate relationships to continue these other ventures.

Jointness

In the early years there were activity links with all the parties mentioned, and all parties provided resources that the business needed. Walden offered market knowledge and contacts, the UK tanners provided the material and a lot of technical advice about that material, and A&P Holt linked helped them set up the management of the West Indian Shipping agency.

Looking at these facts it is useful to consider the process of "networking" that was actually occurring. By the late 1850s both

brothers had been groomed in international trade and the information we have is that both were good at it and had done well. Associated with this was the fact that in the middle of the nineteenth century the commission agent was viewed as one of the most important individuals in foreign trade in the UK and the US. According to John (1959, p 39) “to create a successful commission business was the aim of ambitious young men in trade”. With his years of living amongst the wealthy and influential traders and bankers in New York Alfred had built up exceptional contacts. As a result the brothers would have felt certain that they had skills and resources to be successful in a trading venture and that they had advice close at hand for any surprises that may arise.

While the choice of the leather industry may appear curious it was classed at that time as the third largest in the US (when employment and output from the leather using industries such as footwear, saddlery and clothing were added in). The Swamp area next to Wall Street was famous for its leather concentration as were its many wealthy tanners with whom Alfred no doubt socialized. Given that Alfred was in New York for three years before starting the business it is quite certain that he would have had both time and the opportunity to get to know the business and build relationships with a number of important players.

It is clear that he was aware that opportunities existed for imported material to meet the rapidly growing domestic for all types of leather. The Eastern USA did not have the raw material supply to meet that growing demand. He would also have been aware of the potential to trade the skins into Gloversville in Fulton County in up-state New York which was an important centre for glove making, and into Massachusetts where Boston was at the centre of a cluster of growing numbers of boot and shoe manufacturers.

Alfred used the American named Walden to develop and extend his contacts in the leather industry, and no doubt to help specify what they needed from the UK. The company shared their names until Walden became ill in 1863. We do not know how successfully they worked together although the heated arguments with the UK suppliers that subsequently arose over quality would likely indicate that Walden was a trader rather than a tanner with technical knowledge. What he brought to the table was a good knowledge of local requirements and customers.

During this period we see the brothers developing relationships and assessing their available resources in terms of

- international finance and trading
- transatlantic shipping logistics
- the US leather industry, its locations and requirements
- searching for suppliers in the UK, based on no technical knowledge and limited understandings of the precise market needs.

UK leather had been exported routinely to the US since the first days of settlement in the 17th century but a requirement for part processed material rather than finished leather required a big adjustment.

Jointness is particularly measure when two partners start to make adjustments to product or service details to fit better with the needs of one another. We know more about the activity links with Turney Bros than the other suppliers that Booths had and it seems the level of jointness between the two soon became quite strong. The constant stream of letters complaining about the quality of the skins did not seem to damage the close relationship with Turneys which was to remain until the building at Trent Bridge was closed and converted into apartments in 1981. At no stage is there ever a mention of bad relationship or consideration of a split. Indeed all the comments we

have indicate an increasingly close relationship with the issues being treated more as tiffs in a marriage than anything likely to cause a rift. The agreement on the new financing to make matters easier in the US was seen as a major breakthrough and there were other adjustments in the grading mixes and detailed specifications being sold.

Turney Brothers of Nottingham was a new tannery, only just founded in 1860, with a large production capacity in sheepskins. The comparatively new technology of splitting meant they produced split pieces of sheepskin. They made an upper called a “skiver” and a lower flesh which was used mostly for chamois. With a start up tannery it seems logical that John Turney would be pleased to find someone who could potentially open up the United States market, and that a large new tannery would like to test the US market.

So in the early1860s the Booth Brothers would have seen themselves as sitting within four networks which gave them access to things to sell, places to sell them and the skills to manage everything involved in safe and economical movement of those goods from one continent to another.

Figure 5: A simple Booth Network picture in 1863

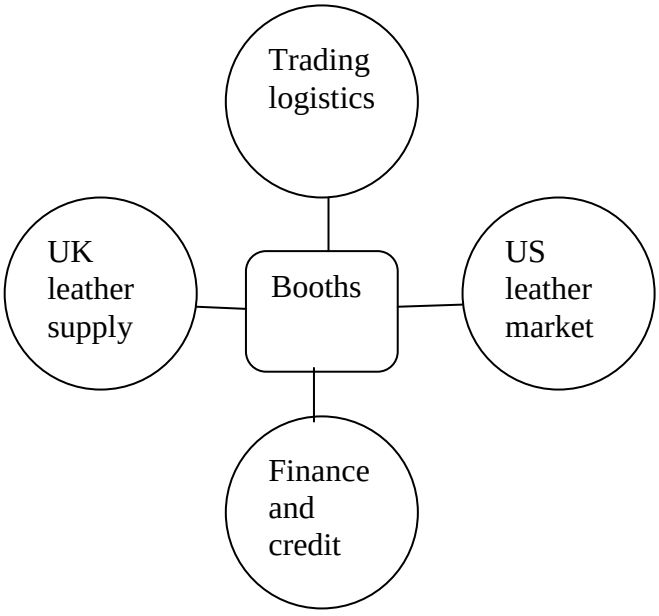


Figure 5 shows a simple network picture giving an overview of the position after the start of the leather business. It is an oversimplification given that in the UK they started with three suppliers and must have built up many contacts to establish those three. We know their relationships in trading and shipping were extensive and would be used for transportation goods over to the US, logistics and finance. In the US we know the least about their relationships at the start but we are sure they were connected into the senior figures of the New York business and then used Walden for links into centres such as Boston and Gloversville. So each of the circles in Figure 5 would have had many spikes or relationships linking them to individuals and companies which meant they were tightly embedded in these complex networks.

What is important is that coming from a background strong in trading and shipping rather than a tannery background meant that the finance and logistics resources they had would be different from those in standard use in the leather industry. As we have seen most US tanners had their own banks or specialist leather banking facilities which had evolved out the Swamp area being such an important leather centre for two centuries. Bringing in resources in banking from a more global perspective at a time when international trade was accelerating would have been very useful. To a degree at least there configuration was unique.

It is clear that they developed strategy steadily over time using a wide network horizon. They brought in knowledge from other networks and areas wherever they thought they might impact the leather business.

We are to discover that keeping out of the public eye became a constant in the Booth Company, but there is no evidence that it was a planned strategy. It was never articulated in any publication, informal

or formal, found to date and may just originate in the natural modesty and religious underpinnings of the family. In these early years and for 100 years or more the company did not locate its offices in the most obvious locations: in New York nearer the docks rather than in the leather district, and subsequently in London not in the Bermondsey leather area but nearer the city. At no time did they seek a "big" image in the leather industry. One reason for this would have been to strengthen their links in the associated networks such as finance and shipping rather than becoming totally leather centric. This fits with Charles' natural desire to be fully in tune with the bigger picture and watchful of trends that might impact his business areas. Perhaps in these areas offices were more expensive than in the leather district and the tendency to use basement offices came as a result of trying to maintain competitiveness with other leather dealers.

The first years proved quite difficult. The American Civil War broke out and the market proved tougher than expected. They discovered that leather is not a homogeneous commodity and if it is badly preserved or carelessly shipped it can deteriorate. What looks good at one moment can soon be made to look poor in a different light or in a different economic climate. A trader who is unable to understand the technicalities of the material or to be able to assess their true worth will fail. Both customers and suppliers can mislead him, and perhaps even cheat him. So for most of the first decade the brothers had a steep learning curve in the details of leather grading and quality.

In the middle of the decade Albert did remark in a note to Charles that their company had a complex structure that they would never have built from first principles. Yet it was the management of this complexity that was to be the essence of their success.

In this period we can identify:

1. Booths went out of their way to develop relationships before starting the business
2. Booths redefined the network they entered and viewed it differently from incumbent actors
4. Specific relationships evolved to a level that Booths were able to confront the relationships rather than concede
5. Booths were aided by the fact that their network picture encompassed both sides of the Atlantic while each of their partners only knew their individual country.

4.5 Episode 2: Starting a Shipping Business 1865-1870

From the start Charles had always wanted to start in shipping and with his brother focused on leather he put serious planning had into starting a shipping line. It was natural, given their history, relationships and location that shipping would have been in the minds of the family for a number of years. At the time steam was most used for activities such as mail delivery around the world as the new engines and large amount of coal carried left little space for cargo. The ships stayed mostly on establish routes and schedules, running to a timetable as best the seas and weather would permit although Charles wondered in an 1864 letter to Alfred[16] whether this system would remain: “You will perceive that the thing to be considered is what shape will steam trade eventually take – will it be established lines? – or free steamers going anywhere on charter like (sailing) ships".

When Charles left the US in 1864 to return to the UK he planned to set up the shipping line. He had helped stabilise the leather business in New York and Alfred was happy to remain there to run it. He

[16] quoted in John 1959, p. 33

wanted to add in a shipping line to "not only carry Alfred's skins but merchandise to and fro across the Atlantic." [17]

As with the leather business many relationships had been developed and prepared to make it easier for them to enter the shipping industry network. He understood the resources he would need and had those from his brother in law Philip Holt in terms of both technology and shipping line management experience. He had his own knowledge from his apprenticeship and from knowing the requirements involved in moving the Booth leathers across the Atlantic. Having built these relationships over time he was able to insinuate his business more tightly into the shipping network. Effectively Booths had considerable social capital (Easton, 2004) available with the shipping network that he could call upon to finalise his plans. This had been aided by the learning gained from the management from New York of the Holt's New York to West Indies trade had given them some direct experience.

He used 1864 to look for suitable routes, considering and rejecting Liverpool - New York, New York – West Indies, New York-Newfoundland-Liverpool, and New York - Rio de Janeiro. In this instance the overlapping informal and formal shipping network within which Booths existed allowed for open discussion but clearly created constraints.

It appeared that Charles really wanted to establish a Calcutta trade but was advised that since all the family would be able to afford was two small boats to open up this route they would merely create an opportunity for other larger operators to follow them in. This was discussed with their cousins the Holts, who were at that time looking at the China trade and had in 1864 established a South Brazilian line. Trials with a new steam engine by Alfred Holt had been successful in

[17] Norman-Butler, 1972, p. 34

1864 and in 1865 the brothers decided to start with two small steamships doing general shipping and mail business between three northern ports in Brazil (Fortaleza (Ceará), Maranham and Belem (Pará)) and Liverpool. The historic or traditional method of financing ships in a business that could not afford all the capital itself was to divide the cost into sixty four parts. Alfred Booth bought as many as they could and acted as managing owners. Family and friends were found within a month to buy the remainder, albeit with some refusals. For each of the first two, *Augustine* and *Jerome,* the Booths held 49 shares in the name of Alfred Booth and Company, members of the Holt family had 14 and a James Quinn 1. For the subsequent two vessels Booths reduced their shareholding to 20 and 33 respectively and additional shareholders came in.[18] According to their mother the "two brothers invested practically the whole of their modest fortune in the purchase of (these) two steamships".[19]

A separate account was set up for each voyage and a management fee of £25 charged plus an amount for maintenance, depreciation and a reserve before the profits were paid out. The contracts for the two ships were placed in February 1865 and the *Augustine* was the first to be launched later that year using Alfred Holt's new engine of 95 horse power. It was a three decked schooner rigged screw driven ship of 1056 gross tons. She had accommodation for twenty five saloon and fifty steerage passengers.

So by 1865 they had begun the shipping venture in earnest and both businesses were together absorbing large amounts of capital. The company was very dependent upon credits from the Holts and Rathbones. They also borrowed from the Royal Bank of Liverpool.

[18] Heaton, 1987, p.17.
[19] Booth, 1918, p. 6

Charles Booth sailed with the *Augustine* on its first voyage to Belem (Pará) and Forteleza (Ceará) in Brazil via Lisbon on February 15th 1866. His presence was necessary because of his understanding of both the engines of the ship and the postal services of South America.

A good business was eventually built up with these smaller ports but not without difficulty. On the first voyage they obtained the mail contract from north-east Brazil. Yet the perils of such a venture became quickly obvious when the *Jerome* was adjudged to be at fault in a collision with another vessel and large amounts of compensation had to be paid out.

Alfred stayed in New York not returning home until he came back to Liverpool for two years in 1867 after his marriage to Miss Lydia Allen Butler, daughter of Benjamin F. Butler, who was a law partner of Martin Van Buren and Attorney General in President Jackson's Cabinet. Charles remained in Liverpool to be hands on with the steamship business. So a cousin Thomas Fletcher had been appointed junior partner in 1867 and sent to New York. In 1867 the business employed six people in Liverpool and four in New York (a partner, two clerks and a warehouseman). US Sales in 1868 continued at about US $2500 a month but the losses from errors and poor valuations diminished. On top of this were the various other commissions and shipping income.

In 1868 Booths persuaded Gunston, Wilson and Company to withdraw its sailing ships and provide them £10000 to build two more steamers, the *Ambrose* in 1868 and the *Bernard* in 1870. In this latter vessel we know that Booths held 35/64ths while the builders retained 12/64ths as security against £3,000 to be paid off over two years.

The arrival of competitors such as the Singletons (three ships) and Hugh Evans (two ships) to compete in the North Brazilian trade in 1869 was seen by external observers as a potential disaster for the Booth Line. The Booth and Holt combined view was that actually a large number of steam ships working the Brazilian market would remove the intense competition from the sailing ships rather than each other, and this was to prove the case. After some initial battles with Singletons agreed timings and routes were worked out and the competition from sailing ships was seen off. Foreign competition when it arose was also fitted in to everyone's satisfaction.

For Booths at this stage the shipping network was quite separate from the leather business. In the period we see them start to use their social and family contacts to access resources in design and build and to decide routes. With Singletons we see that with Booths more strongly embedded in the network with strong relationships allowing Booths to negotiate from strength to achieve a satisfactory conclusion.

4.6 Consideration of Episode 2.

The key to any analysis of this period comes in a quote from Charles that we find a letter he was to write in 1883: "the working up of new business….is the life of any concern such as ours".[20] In the first half of the 1860s the Booths worked to establish a successful leather trading business between the UK and the US. In that period they tried a few other things but eventually settled back to the core business of leather. Yet somewhere in the entrepreneurial spirit of Charles in particular remained the desire to be a ship owner, as the family had been thirty years before.

Subjective Interpretation

[20] John, 1959, p.73

The view Charles had of the situation in the mid 1860s is made clear when he returns to the UK from the US and feels able to discuss setting up a shipping line which he declares would move his skins and other goods across the Atlantic.

In order to achieve this through building his own ships meant he required many resources including capital and expertise and these he chose to find from his family connection with Holts and from the Banks. The final outcome in no way resembled the initial plan and it was many years before the ships would be used to carry skins, and this was between Brazil and the US rather than Liverpool and New York.

This indicates that his desire to move into shipping was stronger than his desire just to have a transatlantic line and in his network activity he was willing to make many compromises to get established. Also that on examination he wanted to find a way to work with the Holts that would be easy and amicable. They were after all the leaders in the sector in Liverpool.

Relativity

The discussions on the start-up and the early years of the shipping business were very much a Liverpool matter and Charles was in Liverpool throughout the period of setting up.

Given his logical starting position of wanting to work with the Holts he at once limited his choice in relationships and also to a considerable degree where and how the line operated. In return for access to resources he quite strictly reduced his options as to where he would trade.

After the New York to Liverpool was shown to be too competitive his preference was Calcutta but the finances available did not run to the

size of ship required. Also relevant was the fact that the brothers Alfred and Philip Holt set up a new company in April 1866 to service China and the Far East (Heaton, 1987, p14) and likely had this plan while the initial Booth plans were being discussed. We know that the Booths used all their free capital for about two thirds ownership of the two ships with the Holts providing most of the other third, and the Banks being used to help provide working capital for the leather side.

So the first two years were very much about a dynamic networking process balancing the resources of technology and finance which Booths needed along with the destinations and cargos that did not compete directly with their key partner Holts.

Interdependencies

The relativities meant that at the start of the new shipping venture the Booths created significant dependencies to ensure access to resources and this limited their networking choices. So in terms of choices the company both conformed with and conceded to the suggestions from Holts on the types of ships to built, there size and the destinations that would be best. As with the leather side this was a moment of establishment so the company was striving to create a structure of relationships that would be secure for the future.

The three aspects of networking are very much concerned with the paradoxes of the company having control and taking decisions about its network position but that in so doing the company ends up creating limits and boundaries for itself. This is very apparent at this stage.

At the start little is said about what the ships would carry and it was mail and passengers that were to prove the key items initially. This was only worked out on the first voyage. Getting a mail contract with

the ports of north eastern was a key development in making this quite risky venture viable.

When later in the decade a competitor entered the trade the time that had passed meant that Booths had stronger relationships and were willing to confront their bigger competitor and coerce them into making a deal which worked for all parties. The network position of holding a strong relationship with both the Holts and the Brazilian ports greatly strengthened the negotiating stance of Booths in this matter,

Jointness

As opposed to leather Booths had a much more junior position in the shipping industry and would always have to fit in amongst much bigger companies. Over time the relationship with Holts might become less symmetric but certainly at the start Booths were very much the junior partner. Nevertheless Holts were willing to provide engineers to travel on the Booth ships to minimise the chance of problems with the new technology they had bought

The jointness with Holt was clearly quite large, and beyond that of just family friends. Although Holts had the scale and capital to afford it they did work with Booths in a number of ways from the agency for the West Indian to New York line, through capital for the first two ships and the aforementioned provision of engineers. All this was over and above many hours of free advice.

A level of jointness could also be said to have developed with the Brazilian ports that relied on the Booth steamers to move their mail to Portugal and the UK and through this came to rely on them for other items over time.

Towards the end of the first decade of the business the Booth and Co structure looked as shown in Figure 8.

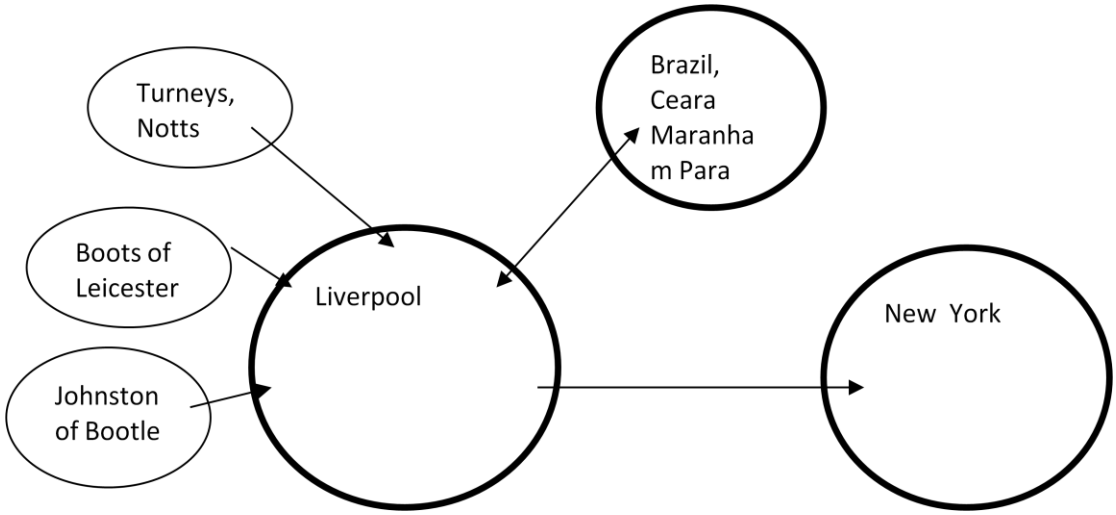


Figure 5: Booths around 1870

In addition to this rather basic structure shown in Figure 5 they had many significant relationships:

Banking and Investors:

- Royal Bank of Liverpool
- Bank of America
- Rathbone
- Holts
- Other friends and associates
- Gunston, Wilson and Company

Leather:

- Sumac tanners in Bermondsey, London
- Merchants and manufacturers in New York City, Gloversville and Boston

Shipping:

- Holts,
- Singlehurst
- Gunston, Wilson and Company
- The cities of Ceara, Maranham and Para in Brazil

- Lisbon and Porto

So the network outcomes of the decade were a successful business, but not quite what anyone had expected at the start.

In this section we see the start of the Booth shipping business with a number of similar characteristics to their approach to leather:

1. Charles had clearly built close relationships which he could develop into transactional relationships and use to enter the shipping network
2. Intense interactions made it clear that he had to conform in the decision regarding routes as his network position and resources would not allow him to go to the areas of first preference.
3. Later with greater jointness developed with Holt and the Brazilian ports Booths did not have to concede to pressure from Singlehurst but were able to interact with all parties to a mutually workable solution.
3. It is clear that Charles took a great deal of time interpreting what his network position was and what his expectations were of other actors in the network
4. Early on he made efforts to develop a high level of jointness with Holts in order to ensure support with the design and running of the steam engines.
5. Other than perhaps in some back office functions the Leather and the shipping networks did not inter-relate in this period. Yet the Booth configuration in a network that included many relationships in north east Brazil in Portugal and in Liverpool did create a Booth network picture which overlapped a number of individual networks.

4.7 Episode 3: Innovation and Major Network Change 1870-1890

Despite industrialisation already being well underway the average leather producing unit on both sides of the Atlantic remained small, and quite complex in terms of materials used. As late as the 1880s in

the UK the average tanner only employed 18 people making new plants like Turneys the exception. Despite this lack of scale the UK had started exporting shoes to newly developing British dependencies in the main – Australia, Canada, South Africa, and the West Indies – and leather to France, Holland, Germany and Belgium in the 1860s. London, and in particular the Bermondsey area, was the centre of this trade. The US had high levels of protectionism at that time and finished products were banned. Part processed was only allowed where there were proven gaps.

In the leather industry Booth and Co were positioned to serve the US market in a number of ways:

- a one stop shop for US customers, with specific types of sheep and other material available
- an ability to handle special orders for raw (during March, April, May 1873 special orders made up 30% of the business)
- provision of credit to smaller firms (on both sides of the Atlantic). Sales were made on 30, 60 or 90 days.

These capabilities involved adaptations needed to meet the needs of a fast growing and evolving market. "The recovery of debt so created was one of the ways in which Alfred Booth and Company were later forced into the manufacturing side of the industry, both in England and America".[21] While forced is a strong word to use in this instance the comment is fair as they were, as we shall see, put in a position of making a difficult choice as a result of having extended credit.

In 1870 Alfred Booth was thirty five and Charles Booth almost thirty. If 1865 had seen the company come through its probation by 1870 they were a fully structured business in what was a much more mature market place. Alfred Booth had an excellent reputation for reliability and good judgement, Charles was expert in the business of

[21] John, 1959 p.45

the “steamers”. This meant that essentially Alfred had been needed in New York from 1865 on and Charles in the UK available to sail with the ships and manage the office in Liverpool.

Around 1870 they began to recognise the need to develop their organisational structure and introduce more staff to whom they could devolve some responsibility. The Hon. Henry Romilly (related via the Crompton family) joined in 1871. Romilly worked for Booths for 16 years, most of the 1870s in the USA. He was essentially a financial man. Sadly he suffered from ill health throughout this period. Nevertheless he made some important improvements and this new structure allowed the business to develop without either of the brothers spending that much time in the USA. Alfred Booth settled back into Liverpool and was Congregational Treasurer at the Renshaw Street Chapel from 1875 to 1883.

Again the importance of family links came into play. Alfred married Miss Lydia Butler in 1867 and Charles married Miss Mary Macaulay in 1871. This latter relationship brought Charles into the network of the extended Potter family including Beatrice Webb and her many influential cousins. This new set of relationships, while not directly relevant to the leather industry, was to have a major impact on the activities Charles undertook later in his career. Charles was renowned for his late hours “going early to the office and remaining late not leaving till ten or even eleven o’clock at night”[22]. These long hours with little sleep and little time for eating led to illness and Charles succumbed to a form of nervous indigestion. To avoid being permanently invalided he was advised to go abroad to rest and from December 1873 until the summer of 1875 he lived with his wife and daughter in Switzerland. He took no salary but determined to live off 5 per cent of his savings per annum until fit to take up work again.

[22] Booth, 1918, p10

On his return he decided to live in London but was still unable to work. He was thinking about the business, however, and arranged for the building of a steam vessel with a much smaller boiler which would take cargo only, travelling much slower, but using a fraction of the coal. In the summer of 1876 he travelled on this vessel to Brazil and subsequently came back into the business full time. This three month trip was one of very few business journeys when he was joined by his wife and it remained one of his most memorable. The new ship did use much less coal, but was not to prove viable long term, although his wife tells us that he gained "much insight into points which were of use to him afterwards".[23]

When he had been in Liverpool Charles had become involved in local social and political causes. He represented Liverpool on the executive committee of the Education League. He was also involved in the Legal Aid Society, the Toxteth Association and the Liverpool Operatives Trades Hall. These areas of intense interest and the relationships developed through his marriage were part of the reason for him to move his business activities to London. A new office was opened in 84 King William Street. This was not in the expected leather sector in Bermondsey but close to the financial centre of London instead. A major part of the rationale for being in London was to gain access to European raw and semi-processed skins. With London being such a major centre in the UK leather industry skins from many countries were readily available there. For the Booth Company to gain access to these the simplest method was to have a full time base in London and to start to interface with the companies and individuals involved. Charles with his family connections now had many contacts and acquaintances in the City. These were to be useful both for the company and his personal pursuits.

[23] Booth, 1918, p.13

At the start of the 1870s they offered their American clients a way to get hold of raw material in a variety of process stages suited to their needs, with a confirmed focus on sheepskins. At the same time they offered credit to clients on both sides of the Atlantic. Buying a specific product on behalf of US clients was relatively straightforward but taking goods into the US on consignment from UK tanners was more complex, as grades and qualities in leather are a very subjective matter. Complaints about the quality of goods shipped by a tanner have been an issue of contention for many centuries. They were the subject of many UK Acts of Parliament in the Middle Ages. Dealing in this way required a great deal of skill and knowledge. Charles wrote "it is not in our interest to get the better of either the men we buy from or those we sell to – but to do the best we can for each subject to a moderate remuneration for ourselves, and to give our chief attention to getting the utmost value out of the goods we deal in 1, by proper preparation and 2, by bringing the skins into use for the purpose they best suit."[24]

This was no easy matter. The US market was quite volatile and had two seasons while the UK market was strongly seasonal to the extent of the spring lambing period and influenced a lot by the price of wool and domestic demand. Untanned pickle pelts may be classed as a commodity but below the surface the age, the breed, and the diet of the animal will have a big impact on their potential quality even before consideration of the skill with which it has been flayed, preserved and then de-woolled and pickled. Often if the value of the wool is very high the skins can be treated quite badly as the felmongers tries to ensure the longest and best fibre is obtained for the wool sale.

Into this equation comes the valuation of stock which was always an issue for tanning companies. Normally the idea was to sell not based on the purchase price but on the replacement price. Charles worked

[24] John 1959 p.43

out detailed approaches about what to do when they thought they were in a rising or a falling market, and when they thought the market was holding at the bottom. He analysed this in terms of what was best for both buyer and seller and noted that after a while it was technically safer to move goods into the tanned state rather than hold them indefinitely as pickle.

Back in 1868 Alfred Booth wrote to his brother in July about a meeting with Mr. Johnstone of Bootle who had come to the office in Liverpool complaining that he had lost patience with some of his workforce and intended to bring three of them up before a magistrate for going off "last Monday morning and letting £20 of pelts get spoilt in the summer heat".[25] These sorts of events meant that over time Booths became experts and were actually known to give wide ranging advice to their suppliers. This was particularly the case for the smaller ones who wanted to get started in the trade.

Booths brought family values and training skills to the business, although for a while their financial and meticulous accounting skills appear to have been the most useful. They paid their suppliers 75% of the value on delivery to the warehouse in Liverpool and in the US sold initially on 10 days which might occasionally be allowed to stretch to 30 days. In the early seventies sixty days became more common and ninety was not unknown. In the quiet trading times of the mid seventies records show some dealings at 120 days with a discount of 1% for cash. Final accounts were settled with suppliers on a regular basis but even here on many occasions Booths advanced cash for work in process. This meant that Booths had to be very skilled as very large amounts of cash were tied up in financing the business.

[25] John, 1959, p. 44

On top of this from 1863 through to 1878 the dollar was not pegged to gold and the company had to deal with a wildly fluctuating exchange rate to which they were the ones most exposed. They did consider offering suppliers the chance to "hold for exchange" but the suppliers did not have the expertise to understand the elements that impacted on the exchange rate. These included the timing of the main shipments of cotton from the US to the UK each year and the associated transfer of gold.

The charges the Booths had made during the Civil War included a 2.5% *del credere* for the assumption of risk. The general commission was 5% with the supplier paying for the transatlantic shipping. After the war this was reduced to an overall 6% and in 1871 when the impact of the better communications from more steam shipping and the telegraph the regular supplier's commissions was further dropped to 5%.

Shortly after he joined in 1870 Henry Romilly was asked to set up a company code for the telegraph so they could communicate effectively globally, although partners' letters continued until the 1930s and then were largely replaced by the company newsletters.

As indicated most of the imports were sheep pickle grains and fleshes but at the start of the 1870s a new material was added - the roan. Two elements made this interesting for Booths. First during the 1860s they had seen a rise in the demand for footwear leather especially in the Boston area where the footwear makers were industrializing fastest. "Boston is a good staple trade" wrote Alfred Booth in 1870. Just as the Americans have boots "we must find them leather". In the UK the wool price was high and pulling in sheepskins which were too thin for splitting when the wool was removed. These "roans" were then exported to the US in the pickle and this trade formed the

backbone of much of the Booth business until the turn of the century when domestic supplies in the US had grown to compete.

Alfred Booth had actually started to develop the business in 1868 and senior staff had made fortnightly trips to Boston from New York. In 1870 New York was selling £8000 a month and an office was put in 141 Purchase Street, Boston. This trade continued to grow all through the 1870s and for example by 1873`was registered at £16000 a month, although profit margins were not always maintained throughout.

For Booths 1872 appears to have been remembered more as the year that raw hides were placed on the "free list" of imported raw materials. Duty had been put on all leather imports in the 1840s although at a lower rate for raw material than finished. When they were put on the free list there was considerable hostility from some tanners including an Englishman, born in Newcastle, James Kent. Kent who made glove leather in Gloversville argued that "free hides would ruin the leather and glove business in this county"[26] but he was later happy to admit this had been quite a wrong judgment.

The timing of the start of Booth & Co had been good, since with more and more people emigrating around the world new sources of sheepskins had opened up.[27] The largest source was Australia and New Zealand, and it was profitable to import the wool skins to the UK where English felmongers would remove the wool and then to export the pelts in the pickled condition to America. The light leather industry continued to expand quite quickly and there was also a considerable hunger for goatskins which was the first material of choice for the many "morocco" leather tanners who had established in Wilmington, Philadelphia, and New England. Some sheepskins were

[26] New York Times, Oct 4 1888 "Built upon free hides. How Fulton County's Leather Business Grew".
[27] White, 1956

used in the Moroccan trade but mostly they went to the glove trade in Gloversville in upper New York State where domestic deer and imported sheep were the raw materials used. Things accelerated after the 1872 changes and soon Mr. Kent was to become one of Booth and Co's principal customers in Gloversville. However in 1877 the Kent and Stevens plant in Gloversville started to get into financial difficulties and Booths had to become financially involved.

Around this time Booths made what was to become a key hiring. In 1873 Booths hired Julius Kuttner as temporary book-keeper. He had come to the US having worked in a corset factory in Stuttgart, Germany and had been developing a machine production for corsets to replace the existing hand-made methods. He had also worked on improving textile machinery but had ended up "at a loose end" [28]when he joined Booths. In 1877 Charles Booth was in the US for about five months - "the business being in a critical condition"[29] - and took Kuttner with him on a trip to Gloversville to learn in detail about the Kent and Stevens problems. There were a lot of business failures in Gloversville around that time and Kent's position had deteriorated as a result of dishonest activity of Fred Stevens, the junior partner:

The cause of the failure dates back to the palmy days of the old firm of Kent & Stevens, when the junior member was rushing blindfolded into every species of extravagance, purchasing stock far beyond the requirements of the business or the dictates of prudence. But the most serious drawback was caused by the extensive forgeries of Fred Stevens prior to his unceremonious departure. The forgeries are believed to have aggregated nearly $100,000, and the spurious notes held mainly by the National Bank of Gloversville, Hays & Wells' bank of Johnstown and Booth & Co, of New York.[30]

[28] White, 1956 p. 4
[29] Booth, 1918, p. 48
[30] UTICA MORNING HERALD Thursday, April 23, 1878

The debts at failure were actually over US $120,000 although Kent had managed to repay some US $50,000. The Booth papers record[31] that US $70000 was due for South African deerskins and Brazilian goat. Initially Booth & Co paid off the other creditors and helped secure loans for Kent to run the business via a mortgage (in the name of Kuttner and his wife). When it was later agreed that Booths would become more interested in dried skins of goat and kangaroo in particular the business was completely reorganized and became Booth and Kent. James Kent continued to work on technical and research matters but with Kuttner, who had been made manager of the New York office, taking a careful oversight over matters in Gloversville, superintending all the commercial areas.

Kuttner used this connection to rekindle his own interest in technology as well as business. "He found a congenial spirit in James Kent, who was also an inventor".[32] As a consequence a number of new technological developments were to come from the Gloversville tannery and two fundamentally new ways of tanning were developed there in 1879 (Dongola) and 1884 (Chrome Tanning). The latter was to become the dominant tanning technology in the world after the 1st World War and remains so all through the twentieth century. (Thomson, 1985 and Luck, 1986)

The best description of events in the discovery of Dongola is given in a detailed account in the New York Times.[33] James Kent is described in the article by "G.F.S" who was writing about the leather industry in Fulton County which includes both Gloversville and its adjacent town of Johnstown. He was an Englishman with a "genius for investigation and experiment". The abolition of duty in 1872 already mentioned brought in skins of "every kind of animal from every quarter of the globe" including kangaroos which had been thought good for gloving.

[31] John 1959, p. 50
[32] White 1956, p. 6
[33] NYT Oct 4, 1888

"Mr. Kent, always on the watch for something new, accumulated a considerable supply of these Australian rat skins, as they were called, and began experiments". It apparently took some years after which he discovered the "secret of producing a tough, strong, pliable leather, impervious to water which had been his technical target. Kent's process was worthless for gloves and mittens, but it proved an excellent substitute for the (vegetable tanned) calf of which shoes were then almost wholly made." Mr. Kent enlarged his factory, "guarded closely his secret and prepared to furnish the world with his product". The article goes on to explain that like most entrepreneurs he was a "poor business manager" and had to be saved by Booth & Co. "Mr. Kent became its practical manager, and before he died (in 1886) .....he drew from its profits a competence and had the satisfaction of realizing that to his own efforts was due the beginning of this surprising growth of modern leather dressing."

The scale of the growth should not be underestimated as we understand that in 1872 he had only two rooms and a very small number of employees, whereas by the start of the 1880s with the involvement of Booth & Co this had grown to 500 workers and what the paper calls "the largest manufactory of its kind in this country". The glove business in Fulton County had peaked during the Civil war and was stagnating but this new technology gave the leather side a boost and appears to have revitalized the glove side also. In the 1880s the area had 73 tanners dressing leather for gloves and footwear uppers. Booth staff were headhunted by out of state tanners trying to get access to the technology.

The Dongola kid (Daisy Kid from 1880 according to John, 1959, p 51[34]) was "one of the first products to receive a brand that is known to the trade anywhere". Its desirability as a substitute for calfskin was

[34] John, 1959, p 51

recognized, and the demand for it “far surpassed anything that Mr. Kent could supply”.

The process had two elements of discovery, the first being what is now called “fat-liquoring”. “So long as tanners were restricted, on the one hand, to the ordinary methods of stuffing tanned leathers with oils and fats, and on the other to the use of egg-yolk, which had long been common in alum tannages, combination tannage remained of but secondary importance, and it was the application of the method of ‘fat-liquoring’ by James Kent in his Dongola leather which gave them the place they now possess, by providing a cheap substitute for egg-yolk, and enabling the tanner to obtain softness and resistance to water without producing the greasy feel which is common to curried leathers” (Procter, 1922 p.376). It was when this discovery was applied a decade later to the chromium tanning patents that chrome tanning became commercially viable.

While it might be thought that the continued expansion of the business meant that cash flow and profits had grown strongly in fact the problems facing all tanners in Gloversville and elsewhere in the US led to shrinking margins. In the US the period between 1873 and 1879 is now termed the Long Depression and thousands of businesses went bankrupt. The footwear trade was not doing badly but the glove trade which used the split skins was affected. On top of this both partners had to go to the US in 1879 to examine a sudden rise in roan stock. A new additional sales office was put in Frankfurt Street in premises shared with the *Volks Zetiung* newspaper and tighter control was taken over activities in Boston. The trip did seem to stimulate improvement.

In 1865 the recorded capital of the business was £14,000 and by 1880 this had grown to £73,415. 1880 started in an exciting mode with the expansion of the Daisy Kid production requiring large quantities of

Ceará goat. Charles Booth visited the plant in Gloversville and bought the adjacent Dodge factory (for $US 30,000) for expansion. In 1882 the Dongola tannage was being successfully used on kangaroo and the records show that some $US 260,000 were employed in the factory in Gloversville, while sheepskin sales through New York and Boston combined were running at £200,000 or about US $1m at the exchange rate of the time.

The sales problems in the late 1870s led the company to consider the fit of their offering of products for the US market and they decided that a thicker sheepskin grain was needed that was not currently available in the market. They linked up with a UK tannery in Nuneaton owned and supplied by a Mr. Johnson to form the Nuneaton Leather Company in 1882. The purpose was to produce a product specifically to suit the New York market. They sold this under the brand ABC. It was at this time that Mr. Charles Wade joined the business as a technician in Nuneaton and started to become a trusted colleague in the Booth business.

Other changes took place during the decade. James Kent died unexpectedly at the age of 55 in 1886 and Booth and Co became outright owners of the tannery in Gloversville. With demand growing rapidly for kangaroo they hired Mr. Miller in Sydney (via Richard Young and Company) to buy kangaroo skins for them. They also set up a shipping route to bring the skins from north east Brazil to the USA.

The Dongola tannage was undoubtedly the feature of the 1880s for the group, and indeed for the industry as a whole. It was to remain a serviceable tannage well into the 1930s despite all other technical developments. Yet the company was actually to be involved in another technical development which was to lead to a much bigger transformation of the world leather industry. This was the initial

discovery and development of chrome tanning, which was to become the dominant tannage for the whole of the 20th century. For the second half of the 20th century chromium was used for more than 90% of the leather tanned worldwide. Without question the introduction of chromium tanning moved leather making from craft to science. Tanneries started to employ trained chemists for the first time.

Commercial chrome tanning had its beginnings in a New York restaurant. Julius Kuttner was a regular for lunch at Racky's restaurant on Frankfort Street, one of the major original streets in the Swamp leather area in New York. Towards the end of the 1870s he met Augustus Schultz, who also dined there. Augustus Schultz had been born in Germany in 1833 and was working in New York as a chemist for Kuttroff and Pickhardt, a German dyestuff importer.

Their lunch time discussions must have been very interesting and certainly ranged far beyond the weather and politics. Both were clearly of an inventive frame of mind and they discussed improvements in tannery technology. They discussed work on further fatliquors to replace egg yolk and then on leathers suited for corset making, an interest of course of Kuttner. The problem with corsets was that the white alum tanned leather used at the time became wet very easily and rusted the corset steels when moistened with perspiration.

It was in this latter area that Schultz went to work and appears to have been given some access to the tannery in Gloversville[35], and

[35] The Leather Manufacturer, vol. VI, New York, January 1 1896. "Mr Kuttner replied that considerable egg-yolk was being used in the factory at Gloversville, operated by James Kent, in which the firm Booth were interested, and that a substitute for this article would be very desirable. Schultz went to work at once to produce a satisfactory substitute but his efforts were unsuccessful. Kuttner then told Schultz that some of the alum tanned skins which were manufactured in Gloversville were used in covering the steel parts of women's corsets; that the steel when moistened with perspiration, would rust; and the rust would strike through the leather and spoil the appearance of the corsets." Skins were given to Schultz for him to see if he could find a way to stop this staining via a new tannage.

certainly a lot of help with skins and chemicals to work on. Through his work with dyes Schultz was aware of the use of bichromate in dyeing and knew of the historic work in Germany by Knapp to make a chrome tanned leather. Working on this process using "two large goblets" he came out with two patents in 1884 for what was to be called the "two bath process". This put bichromate in the first bath and hypo in the second reducing bath. It is not known whether this leather worked for corsets at first – it certainly did some years later – but it is known that little was done with the process in Booth and Kent in Gloversville. According to White (1956) some experiments were carried out to use the process with kangaroos but with limited success.

As already mentioned kangaroos were first imported into the USA in 1860 and Newark appears to have been the chief centre of manufacture. In 1876 the Booths had skins tanned in Gloversville and sold on a commission basis by Richard Young Co. for two years after which, in 1878, they tanned them regularly in Booth and Kent. They opened a store in New York specifically for the sale and distribution of their Gloversville shoe leather. The leathers involved were gambier tanned kangaroo, gambier tanned matt kid and Dongola tanned glazed kid. The famous American boxer John L. Sullivan had started to wear Dongola tanned kangaroo shoes in one of his big fights and as a consequence the product had become very popular. Booth and Kent continued to make glove leather for the local market.

James Kent died in June 1886 having contracted malaria on a holiday trip to Florida. In just a few years of his life things had changed a great deal. From a long time customer who bought South African deerskins and Brazilian goatskins and for whose technical ability Alfred and Charles Booth had a high regard to a partner with whom Charles himself spent many months working out how to turn this

crisis into an opportunity and put in place a structure that would leave the Kent family secure and protect the Booth investment.

In 1879 when Booths were asked by James Kent to supply dried skins such as goat and kangaroo it was agreed to turn the arrangement into a joint venture, and finally on the unexpected death of James Kent his family asked Booths to take on the whole company, which they did. This transformed Booths into tannery owners for the first time.

After he died further attempts were made to introduce chrome tanning into Gloversville. First Asa Bellis and then a Mr. Gottschalk (a technician from Jersey City) tried to make chrome leather but again with limited success.[36]

The records available do not really explain in detail what Schultz and Kuttner did with the chrome tanning research and why it was not used in the Gloversville tannery but it is clear that Kuttner made no demand for ownership or involvement in the Intellectual Property as might happen today. Kuttner left his day job to try and commercialise the patents and there was some litigation between 1888 and 1992 in which the Booths were not involved.

Sig Saxe who later founded the Philippine Cutch Corporation was a Morocco leather tanner who had started making morocco out of goat using sumac, and then converted to the Dongola gambier and alum process. In 1886 he is noted as being interested in the Schultz's chrome process and recognising that it would replace French Kid.[37] Schultz's chrome patents did attract a lot of interest and we do know that Schultz sold them for US $25,000 before going on to research the area of domestic central heating.

[36] White, 1956, p. 7
[37] Leather Trades Review, December 25 1937, p 75.

As suggested by the Saxe comments a major discussion within the industry at the time was the popularity of imported "French kid" which was used for the top end of ladies' footwear. As families moved into the cities and cities grew the demand for softer more elegant footwear grew also. The two leathers being used and sometimes called "imitation French kid" were Kent's Dongola process and the "brushed kid" tanned by the old Morocco manufacturers in Philadelphia.

These tanners were using a process which involved a sumac tannage and brushing with a special "kid brush" but this leather became wet very easily and was "lacking in mellowness and richness of feel."[38] It also did not take a high lustre. The French article was very expensive since it was tanned with alum and egg yolk and then aged for several months before finishing and polishing. It was silky and luxurious in feel at first wear but was not very durable. Dongola could be polished by glazing and was both durable and cheap, but was not so smooth and silky as the original.

It was logical, therefore, that this was one of the first areas where progress with the "chemical tannage" might give quick returns. While many who tried the Schultz process gave it up quickly Robert H. Foerderer from Philadelphia persevered and noted that getting the fat-liquor right would be the key to stopping the leather becoming too hard and tough. Fat-liquoring was an essential part of the Kent Dongola process so perhaps Foerderer realized that borrowing this approach would give him success. Backed by Abe Stein of New York and Marcus Beebe of Boston Foerderer bought the patents and successfully marketed a chrome tan kid under the brand "Vici" kid in 1889. He started to move quickly to obtain total control of the Schultz patents which he succeeded in doing in 1891.

[38] White, 1956, p. 8

In the midst of all these developments Charles Booth wrote in a letter in 1893 that the "working up of new business..... is the life of any concern such as ours".[39] He was talking about both Dongola and Chrome tanning but also about the fortunes of the Brazilian rubber industry which was impacting the shipping side of the business.

Steam ships had been rising in importance and Charles had long thought that as soon as the ships were able to make more economical use of coal - hopefully by halving the amount of coal needed – the steamship would take over the market.

Neither the shipping nor the leather business had been easy in the late 1860s. The Liverpool to North Brazil route deteriorated throughout the Paraguay Brazil war as labour had been diverted from the cash crops and the Brazilian currency had considerably devalued. During the 1870s nuts, drugs and cotton were the main exports from Brazil handled by the Booth ships, with cotton increasing by mid-decade. This changed in the late 1870s as rubber became increasingly important and with it the need in Brazil for railway material, stone and power equipment.

Also since the Booth steam ships did a long voyage via Portugal to three Amazon ports a sailing ship going directly from Pará to Liverpool could actually be quicker. Reports from the captains about stopping "for 3 or 4 hours to cool bearings" or experimenting with "letting some air into the combustion chamber" also indicated quite a high level of technical experimentation with the engines post introduction. A strong point for Booth and Co was the relationship with Philip and Alfred Holt. Until 1873 the Booth Line ships carried engineers supplied by the Holt's Ocean Steamship Company and the Holts worked with them on all the technical developments and problems

[39] John, 1959, p.73

with the new technology of steam shipping. In 1873 Booths hired Edward Crompton as superintendent-engineer of the line.

In one area cooperation failed. In 1870 the provincial government of Pará offered a £10000 a year subsidy for a bi-monthly service to Manáos. The idea was that Singletons and Booths should run this under the management of Charles. However, Booths would not agree to a full merger and the Red Cross Line took the contract and held it into the 1880s.

The results between 1868 and 1874 were pretty good and after a difficult couple of years in 1875 and 1876 the rubber trade started to grow rapidly. Overall their shipping trade was strong, despite having to see off new foreign competition, for the next decade. But some managerial skill was required. Alfred Booth wrote that there was a need to work on the choice of return port: "a ship with a considerable outward cargo can be made to pay by shifting ports for homeward cargo." Charles Booth then purchased two sailing ships to handle the lower value high bulk cargos and set these up sending gunpowder to Pará and rubber and nuts direct back to London. This was done in 1879 and 1880 and also in 1880 a specific Pará to New York route was set up. The Pará trade was generally separated from the other shipping routes as it required bulk direct shipping at low cost per unit and the other routes carried more high value cargoes and passengers. This required seven ships, two for the Pará route and five others to serve the slower service to the other ports. The Booth Steamship Company was thus incorporated in 1881. In 1882 a new service from Manáos to New York was started and then one to Antwerp and Hamburg. This required raising the issued capital from £81500 to £141450 and this was found from family and friends in order to buy two more ships.

The New York runs partly involved shipping skins into the US to feed the Booths tannery and others, and so as the company moved in to the 1890s it had been totally transformed and the foundation laid for a strong future.

4.8 Consideration of Episode 3

The Three Paradoxes of networking suggest that the more a business gets tightly bound up in a network the more it is likely to get trapped within that network. This means that when crises or major changes hit a company it can be harder for them to make the necessary adjustments to prosper. In this sense the period after start up when the company has become established becomes more interesting and makes Albert's comment that they would never had made such a complex structure if they had started from scratch almost a template for the difficulty that a company has in managing relationships in networks.

Looking at the various relationships which Booth and Company had around 1870 perhaps a more complex view of their network picture is a fairer representation.

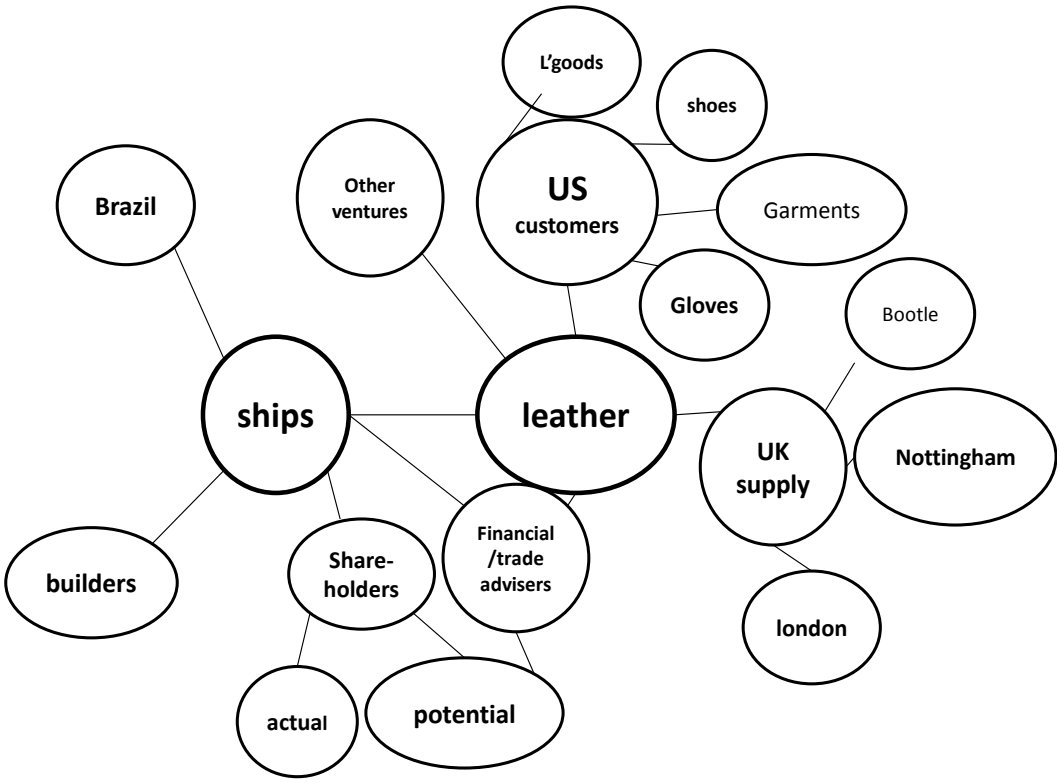


Figure 6: Booth & Co around 1870 in detail

Seen in the light of Figure 5 we have a business with very many active links into quite a number of distinct market areas each with their own complexities. Once the company starts trading it signs contracts and makes deals with its chosen suppliers and customers so it is clear that these will start to limit it.

Another element is that as the two brothers became more involved in family and community life back in the UK they had to divest power and create structure where their control was managed via high levels of trust in others.

Up until 1870 the number of full time employees – excepting the crew on the ships – had remained small. This meant that over the years after 1870 the company grew more nodes of activity where they had offices. To Liverpool and New York were added London, Gloversville

and Boston along with much closer links into Amazon ports and completely new ones with far flung places like Sydney, Australia.

Many new relationships were developed, some directly through business as with James Kent and some by accident via social meetings as with Schultz. The rubber business in Brazilian meant finding sources for materials such as rails to meet demand there and new routes and approaches to bringing the rubber back to Europe.

During this period the networks in which the Booths were operating were impacted by many events:

- The removal of tariffs on hides and skins in 1872
- The development of the Dongola tannage and associated fatliquoring
- The discovery and beginning of chromium tanning
- The gold and dollar exchange issues

The financial developments alone would have stretched most companies. They involved:

- managing gold until 1878
- sorting out extended credit which sometimes meant up to 4 months
- managing currency exchange risks
- dealing with partners in both US and UK who were poor at handling money

The most serious single financial crisis that arose was the problem at Kent and Stevens where the losses required them to conform to the problem, accepting the high loss and moving on, or to confront it and put in more capital in the hope of being able to recover everything and make additional gains.

Decisions related to ownership are about the balance of control over flexibility (Håkansson and Snehota 1995). The moves with Kent meant there was a big change in the outcomes of interaction with the Gloversville tannery, Booth's first move into ownership of manufacturing meaning they now had large numbers of employees to look after, a factory to keep busy and high potential exit charges if they should choose to change direction later.

Subjective Interpretation

While most of the written history about the company in the period after 1870 relates to moments of crisis and intense activity it is clear that the company made steady progress and the brothers were able to manage the business spending less time in the USA.

There view of matters was clearly one that valued good relationships and long lasting partnerships. Once they had passed through the experimentation periods n the 1860s the forward movement of the business was very much a matter of logical evolution rather than delving into new areas. Increasingly we see them viewing the business arena through their experienced eyes rather than through those of their friends and external advisers. Leather became the central component and the partners' letters describe their view of the leather business as "a retail business basing its claim to profits on special work and special knowledge of what we deal in." Over time it is clear that they gained very considerable knowledge in all matters to do with shipping and with leather and able to form their own judgment about how to react to events.

While the discussions with Gunston and Singlehurst in the 1860s must have been quite intense the Booths had the experienced Holts sitting at their sides while these went on. On the other while the issue with Kent and Stevens was equally serious and involved huge amounts of money the central figures in all the decision making

processes were the Booth brothers themselves. This was both the natural role which their experience and knowledge had put them in, but also what was expected by the other actors in the network both companies and individuals. This includes the Banks who if asked would almost certainly have said that they should cut their losses and rebuild the business in other directions.

The decision to let Schultz start experimenting with chromium tanning was similar. By that time we see the start if what were to become known as "Booth men"; employees who understood the approach of the two partners and were sufficiently trusted that they could move forward without endless approvals. So asking Schultz to experiment and see where it led was a natural initiative for Booths and not something seen as a risk or a diversion.

Relativity

What is clear during this period is that relativities did evolve meaning that decisions had to take into account many more factors than in the early years. In facing competition in the Amazon shipping and deciding what to do with Kent the implications for other partners had to be taken into account.

In the Amazon the other shareholders, the port cities and the mail service promised to them, other competitors, other customers and regular clients figured among the many bodies involved. In Gloversville the banks, their reputation in New York, other clients in Gloversville and their specific relationship with Kent himself would also have an impact on what was happening.

In both instances their understanding of the technology was becoming more important which for steam they could use Holts, but for leather probably had a mix of inputs from Turneys and other UK suppliers

and US customers. From the early 1880s it is clear they considered Charles Wade a good technical adviser.

All these relativities affected their options to various degrees. The implications in shipping in terms of relativity were that they worked more closely with Holts to discuss tactics over the competition in the Amazon and during a fairly hectic period of networking in Liverpool to work out a solution to the new competition.
The relationship with Schultz is one where it would appear that he was managed essentially by Kuttner without the Booths being closely involved. Yet from their writings they were aware and watchful.

Interdependence
Along with changes in the relativities there naturally came increasing interdependencies. Those with the Turneys soon became obvious and relationships with Holts moved into serious areas when Holts began to invest and provide engineers for the ships.

There were others in this period worth consideration

1. The Singlehurst episode
2. The Kent crisis
3. The Schultz patents
4. The purchase of two sailing ships to trade gunpowder with nuts/rubber from Para
5. The development of roans in 1870
6. The further development of roans with Charles Wade in Nuneaton
7. Establishing links with France and Belgium for skins
8. Breaking with Holt and moving to London
9. Establishing Surpass leather in Philadelphia
10. Establishing a kangaroo trading office in Sydney

All three Network Paradoxes are clearly highlighted in these separate moments in the company's development. With time they became more confident about confronting the situation and using their network links to allow this to happen.

The Singlehurst and Kent and Stevens approach demonstrate the willingness to confront difficult situations and find a solution. Their relationship with Holts gave them access to many skills in the shipping sector and their banking relationships will have made it easier to work out solutions with Kent which gave them some protection for them investment. So in both these cases the relationships they held actively assisted them in their decision to confront the situation.

As the company grew its various linkages allowed it to bring the shipping and leather together in terms of moving skins from Brazil to the US but the economic requirements of each meant that in other arras there were few overlaps. Steadily the two businesses appear to become quite separate.

As a consequence we see during the period a move to consolidate in each sector and although each was individually growing the company as a whole was not creating a total new business.

In the leather business the relationships needed to build into the US industry lead them into tannery ownership and then as we look at the other elements of development in London, and Sydney we steadily see a company that becomes tanning centric with a supply arm and a finished leather trading capability. So as the 19th century moved on the Booths got stronger but their structure got tighter as they expanded direct ownership of tanneries, leather sales and distribution and some aspects of supply.

Jointness

This throws an interesting aspect on jointness. We see that over time the activity links and resource ties come closer and the companies work together each making more adjustments to improve they worked with each other. In the instances in which Booths chose to confront the situation roughly half of the events moved them into ownership or something close. They ended up owning Kent, they more or less owned Nuneaton, they set up their own offices in London, Boston and elsewhere and were soon to take over full ownership of Surpass.

In this period many major network events occurred:

1. On their first really big confrontational event acquisition became the chosen route. This tightened the network structure and reduced the external links.
2. This did not become an immediate pattern but success led them to be more willing to deal with future issues through ownership rather than building relationships.
3. Within the network they observed tanneries creating new and tighter relationships with suppliers making their trading business less secure and this accelerated their thinking that manufacturing might not be a bad route.
4. They chose to develop a network position with a broad and dense relationship pattern, which helped to recognise opportunities and threats (Håkansson and Waluszewski, 2002)
5. They kept a very flexible position in the network and did not try and control events or technologies.
6. In the development and commercial success of both chrome tanning and Dongola the interfaces between different networks and different parts of the leather network are very clear.

4.9 Episode 4 Growth and Global Expansion 1890-1920 and beyond

For the Booth Company the 1890s were entered in good heart. The company was doing well based on the Brazilian rubber business and on the Gloversville Dongola. The leather industry or at least the small skin side – as opposed to the bovine world – was deeply interested in the development of chrome tanning. Looking back on the 1890s Charles Booth was to say that the decade saw "more progress in the art of leather manufacture than in any decade of the world." He clearly enjoyed being part of it. Over the decade hide usage in the US grew by 21%, sheep consumption by 39% but goat driven on by chrome tanning and the fact that the resulting product was so good for all parts of footwear uppers grew by 1600%.

The Schultz patent was licensed out on the basis of a royalty of 12.5 cents a dozen and a US $12500 annual fee; not only a high price but also hard to collect and so by 1895 there were many tanneries in Philadelphia making copies. The production of chrome kid had become a specialty of Philadelphia. Legal challenges to the patent were initially successful but finally on appeal the Schultz patents were supported in late 1895. The UK press was delighted: "this decision, from a commercial standpoint, must be very satisfactory to Englishmen, for it raises the price of chrome tanned leather to the same level as before, and all firms will have to pay their license to the Company."[40]

All appeared to be successful in a period for Philadelphia tanners which White describes as the "gold rush days of the kid industry."[41]

[40] The Leather Trades Circular and Review, February 11, 1896 p 490
[41] White, 1956, p. 9

This glazed leather had all the qualities and none of the defects of the previous product, could be made quickly and sold at a good margin.

While Booths had not been involved in any of the wrangling about the ownership of the chrome patents they had been watchful and ready to get involved in any successful commercialization. Booths got involved in chrome leather through buying a product from Richard Patswosky a tanner from New York to replace Dongola glazed kid in the late 1880s. This was called "Bonafide" glazed kid. They gave this up in 1894 to work more closely with John P. Mathieu of Philadelphia.

1894 was an important year for Booths. Julius Kuttner, who was by then a partner in Booth & Co, signed a contract with John P. Mathieu, a Philadelphia tanner, to manufacture for them black glazed kid. Mathieu had succeeded in producing this leather using the "Schultz process" and had given it the trade name "Surpass Kid". The deal made was that Booth & Co. would take the full production of 250 dozen skins daily.

Mathieu was 10 years younger than Kuttner and at the age of 30 in 1883 had set up a small Morocco leather tannery making brushed kid in Philadelphia, and then expanded into a new plant he built in Allegheny Avenue in Philadelphia in 1892. The 1894 agreement saw the closure of the downtown Philadelphia sales office of Surpass and the manager there, Albert G. Greier, move to the 6th floor of the Healy Building at 90, Gold Street, New York where a sorting office was placed. Greier worked under Charles Becker who now had charge of sales of shoe leather from both Gloversville and Philadelphia.

The market was very much a sellers' market and for a long time Surpass Philadelphia only produced black leather in one finish. J.P. Mathieu remained general manager of the Surpass tannery and ran it along with his brother Joseph.

We have already mentioned that the period between 1893 and 1898 was one of general business depression and that this was particularly felt by the US Leather Company and others working bovine leathers in the traditional way. The period was not so much of a problem for Booths as even although the Dongola kid declined the new chrome leather was taking its place.

Certainly technical advances in the lighter skins were giving that side of the industry considerable buoyancy. Fatliquoring, Dongola using gambier and aluminium (still in use for kangaroo shoe leather), and chrome tanning were being noticed world-wide. To put the work of Booth & Co in a proper perspective we must look overseas to see the reaction. From the UK Professor Procter was the world's leading authority on leather technology. He visited the US and returned extolling the quality and importance of chrome tanning. At about the same time the German tanning and footwear industry chose to transform itself by using the methods it discovered in the USA.

In December 1898 the US Consul General in Frankfort, Frank Mason wrote an extensive report report[42] on the industry in Germany:

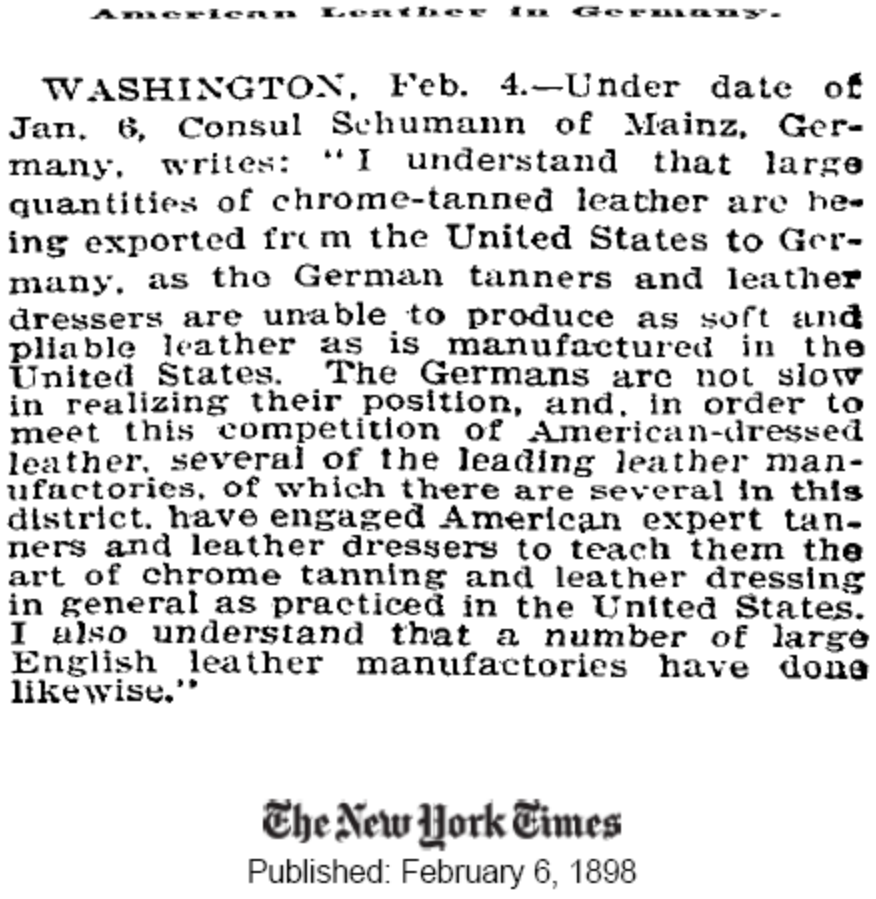
"in the whole of record of industrial development in Germany during the past four years there has been no feature more striking and significant than the progress of the leather industries which now rank about fourth in the productive interests of this country……This whole subject derives an especial interest to Americans from the fact that the German shoe and leather industries are in a state of transition from the slow and primitive methods of hand labor to the most modern forms of chemical tanning and shoe production, and because this transformation consists largely in the adoption of American methods and machinery."

[42] TRYING AMERICAN IDEAS; Leather Industry in Germany Making Use of American Methods. BEHIND US IN MANUFACTURING American Leather Now Being Extensively Used and American Workmen Employed in Germany. New York Times, January 15th 1899

Much of the change had started after the 1873 World Exposition in Vienna when Mr. Schultz (not related to the Schultz of chrome tanning fame) had sold American quality leather so successfully to the European market. The Europeans had noted that a lot of this leather was made on European raw stock, exported to the US by Booths and others, and came back to Europe at a profit even after paying German import duties. Not all of this related to the leather chemistry. Some had to do with factory layouts and the machinery used, symptomatic of the mentality that grew up in the US alongside the concept of exchangeable parts, and the associated mechanization of the many individual elements of production they had isolated. From the invention of the splitting machine in the first decade of the 19th century, and continuous work on extracting tan from bark so the extract could be shipped instead of the incredibly bulky and delicate bark itself the US had been a hot bed of machinery solutions for the leather making process. Mason's report continues *"a leading New England manufacturing company, which turns out exclusively high class tanning machinery has been compelled to enlarge its plant to meet heavy demands from its European agent, who, beginning three years ago with an office in Frankfort has now extended his trade throughout Germany and into Austria, Italy and Russia. Leading German tanners have visited the United States and being everywhere freely admitted, have studied carefully and intelligently American processes and machines.....What is of especial interest at this time, as an example and indication of the policy which is making Germany a great manufacturing nation, is the alert readiness and enterprise with which the shoe and leather manufacturers of this country are learning the lesson set before them at the Columbian Exposition of 1893. The Chrome tanning process was originally invented by a German but it was perfected and made industrially successful at Philadelphia. As soon as it was recognized that American tanners produced by that process soft pliant, and lustrous leather which could not be rivaled in*

this country, the German tanners hastened to master and adopt the new method."

By 1898 the German shoe and leather trade journals were reporting that German tanners had now successfully studied and transferred the chrome process to German tanneries and they felt not only equal but ready to finally "surpass their efficiency." It is outside the scope of this dissertation to examine that claim but there is no doubt that over the next ten years the UK industry was seen to have slipped from a number one position in the world through the 19th century to a number three position behind both the US and Germany. This was a position that was steadily to deteriorate throughout the 20th century, despite the fact that as a British organization the Booths had been responsible for a very large part of it.



American Leather in Germany.

WASHINGTON, Feb. 4.—Under date of Jan. 6, Consul Schumann of Mainz, Germany, writes: "I understand that large quantities of chrome-tanned leather are being exported from the United States to Germany, as the German tanners and leather dressers are unable to produce as soft and pliable leather as is manufactured in the United States. The Germans are not slow in realizing their position, and, in order to meet this competition of American-dressed leather, several of the leading leather manufactories, of which there are several in this district, have engaged American expert tanners and leather dressers to teach them the art of chrome tanning and leather dressing in general as practiced in the United States. I also understand that a number of large English leather manufactories have done likewise."

The New York Times
Published: February 6, 1898

Figure 7: Chrome Tanning 1898[43]

[43] New York Times, 6th February, 1898

It was in 1890 that Booth & Co set up an office in Australia for the purchase of kangaroo skins as well as sheepskins. Frank Miller established this office close to the current Sydney Opera House and William Cunningham joined to help. Cunningham moved to Gloversville in 1898 and later took over the pickled sheepskin department in New York.

1900 began with a shock to the system as Surpass leather was damaged by fire, but the opportunity was taken to rebuild it using all the latest technology and with a layout suited to high volume production of the chrome kid skins.

The directories of the times indicated this transformation:

"J.P. Mathieu & Co., Surpass Glazed Kid Works Westmoreland and Ninth Streets, Ontario and 10th Streets. Plant covers five acres. All new and modern buildings. One of the largest, finest, and most attractive leather works of the world. Complete electrical equipment. Produces only "Surpass Glazed Kid," used by shoe manufacturers. Sold exclusively by Booth & Co., New York, Boston and London." [44]

Booths made a double gain as the supplier of the goatskins to Mathieu throughout this relationship.

In the late 1890s we began to see the introduction of the younger Booths to the business. Two of Alfred's sons entered the shipping business and Charles took his son George to the US shortly after he had finished at School. On his return his mother Mary intervened to stop George going into "trade" and persuaded the family that he should cram to go to Cambridge Trinity. This he did and he remained at Trinity for two years aiming towards a medical qualification. Having

[44] http://www.brynmawr.edu/iconog/king/main2.html (accessed December 2012)

decided that this was not for him in 1901 he rejoined the business as a “clerk” in London.

1901 turned out to be a momentous year for the company. George was quickly sent on a world tour during which he opened a New Zealand office in Christchurch. He was also went on many UK tours around shoe factories to sell the American chrome kid. But most significantly Julius Kuttner died and George and Charles at once went out to the US for a few months after which George was asked to remain in charge. Kuttner had been managing the US for fifteen years and had run the business for the Booths via extensive correspondence, mostly with Charles, and regular visits from one or other of the partners. George M. Booth (often known as GMB), a son of Charles was just 24 when asked to take his place as manager of the US.

This was a significant moment for reflection as the company had grown considerably. In 1884 the New York and Boston offices had just under twenty staff in total but by 1901 this had grown to around 100. These were split into three divisions under the titles of leather, sheepskins and steamers and agencies. The leather was the finished leather being sold in the US and starting to be exported to Europe, while the sheepskins made up the raw material being brought into the USA to supply the tanneries. Both the original founders were now elderly and not in the best of health so as the children were introduced into the management a team of loyal senior staff was built around them. George returned to the UK briefly in July 1902 solely to recruit some more English senior management to take out to the US.

Sales agencies were opened in a number of shoes centres, including St. Louis as the production of the kid mounted. In 1900 a warehouse was opened in Bermondsey, London, to accelerate the sale of chrome kid in Europe. At that time the only European makers of chrome kid

were the German tanners. Booths decided they would like to get involved themselves in 1901 when Charles Wade wanted to own a business and moved from Nuneaton, where Booths disengaged themselves from the partnership, to Whitemoor works in Nottingham. With the help of Booths Charles Wade began to make chrome kid amongst other leathers. This joint venture remained until 1956 when Booths bought the whole business, although Mr. Max Wade remained closely involved for many years after. They had also bought a substantial interest in glue and gelatin makers B. Cannon Co Ltd in Lincoln.

In 1901 Charles H. Skinner was made manager of Gloversville. He had been sent over by Charles to New York in 1891. He took over a diversified business with 450 workers. He stayed in Gloversville until 1908 and during that period he steadily reduced glove leather production so that when he left they were concentrating only on shoe leather. In reality the depression of 1893-98 had started to force that change as generally the chrome tanned kid continued to grow while other areas of their US business struggled and had to be managed very carefully.

Also in 1901 Charles began planning to build a proper port in Manáos which required a pontoon system to handle the big drops in water levels between the high and low water levels. These big variations meant that large ships could not work conveniently in low water periods. In 1903 he made his last trip to the Amazon to see the completed work in Manáos. It was based on a pontoon they had made in the UK and towed up the Amazon. It was this year that the Singlehurst family decided to retire from shipping and they sold their shipping line to Booths.

An important person came on to the scene at this time by the name of Paul Crompton. He had been working in China (probably with the

Blue Funnel line from Liverpool) and since 1902 when he was 32 had been hired by Charles Booth to look for Chinese goatskin supplies. Goat used by Booths had come from Brazil (200 dozen daily in 1901) and India (1000 dozen) with the help of the two businesses J.H.Rossbach Bros of New York and Cohn Bros & Fuchs. The latter company was based in Calcutta and the goat used was called the Patna. Between 1902 and 1904 Crompton set up new agencies replacing these in both Brazil and India.

A major event of the decade, in 1904, required the elderly Charles Booth to travel to the US and spend many months commuting between New York and Philadelphia in order to formally merge Surpass and Booth & Co. The new business, the Surpass Leather Company opened on January 1, 1905. Charles Booth was President, J.P. Mathieu was vice-President and the Mathieus family still ran the manufacturing. The kid sorting department was moved from New York to Philadelphia and put under Mr. W.W.Hilt and A.G.Grier succeeded Charles Becker as sales manager in New York, to be followed by George W. Chandler.

Grier had been the original seller of the Mathieus leather before the Booth connection and in 1894 he had been asked to go to be in charge of the sorting office in New York, which took up the whole of the 6th Floor at 90, Gold Street.

In 1904 Paul Crompton, who was then 34, was brought to the USA by Charles Booth to be raw stock manager in Philadelphia, working for Fred Harrison who became head of the factory office staff. In 1907 when the Booths bought out the Mathieus and took 100% owner ship of Surpass Paul Crompton took over as Vice President of Surpass Leather and General Manager from January 1, 1908. Charles Skinner was brought over from Gloversville to look after the factory management and spent 12 months ensuring he understood the

chrome tannage system in the handover with the Mathieus. The notes from White (p13) indicate while Skinner had been dynamic and innovative in Gloversville he was more protective of methods and personnel in Philadelphia. In this he was praised for easing the change to Booth ownership and all the supervisors stayed and the quality was maintained. In 1909 he replaced dog dung with the enzyme bate Oropon from Germany – a technology which had been discovered ten years earlier by Joseph Turney Wood of Turneys but was only now being commercialized.

Further technical development associated with the Booth Company was to take place in the USA and was announced at Summerdale Station, Philadelphia & Reading R.R.: "One of the greatest and finest leather factories in the world, especially equipped for producing "Ideal Leather," a non-breakable enamelled leather patented by George S. Wolff, founder and president of the company. The entire output is handled by Booth & Co., N.Y."[45]

Acquiring raw materials and distributing finished leather had brought the Booths into touch with all parts of the world. But the hides and skins they were bringing to the US were increasingly being used in their own plants rather than being sold to others. They had also added interests in glue, gelatine and felt (all bi-products of the raw hide and skin trade) on both sides of the Atlantic. They retained trading offices in Nigeria, in New Zealand, and in Australia.

But the younger Booths who had become involved in 1901 and 1902 also helped push through other changes, or at least gave the founding partners confidence to further develop the business. The shipping line had done very well in the 1890s[46] following the invention of the

[45] http://www.brynmawr.edu/iconog/king/main2.html (December 2012)
[46] National Archives – administrative history
http://www.nationalarchives.gov.uk/a2a/records.aspx?cat=138-387boo&cid=0#0
accessed November 2012

invention of the pneumatic tyre in 1888. The boom in Brazilian rubber meant that by 1890 the Booth Line owned 14 vessels. In 1901 the Booth Line and their competitor the Red Cross Line had merged under the name The Booth Steamship Co. Ltd. Also in 1901 the Booth Iquitos Line was established although it was absorbed with its two vessels back into the main business in 1913. In 1903 Alfred Booth helped formally start the Manáos Harbour Company where they had a big holding and a controlling interest for a period. Booths were given management rights for the port of Manáos until 1971.

In 1903 they introduced tours to Madeira and Lisbon. So after some years of steady growth it was a major change when they had eleven ships requisitioned for service in World War I and nine of them were lost. After the War they were left with eighteen vessels but the reduced fleet came with diminished enthusiasm and after more losses in World War II in April 1946 the fleet was sold by George Booth to Lord Vestey over lunch in a London Club.[47]

As indicated Charles did go to the US to help conclude the deal with Surpass leather but in the same year, 1904, he was made a Privy Councillor by Prime Minister Balfour and was encouraged to further his concept of a universal old age pension. This came to fruition with the Old Age Pension Act of 1908 so during the decade the younger members were clearly taking over. Charles was to have another serious bout of illness in 1905 and moved out to his house in Leicestershire to rest and recover, pushing the children back into the forefront with George who having come back from the US with high status for a job well done had effectively become general manager.

The business continued to grow. The children of Albert oriented towards managing the shipping and those of Charles the leather side. G.M. Booth was the senior leather man moving things forward in the

[47]National archive: http://www.nationalarchives.gov.uk/a2a/records.aspx?cat=138-387boo&cid=0#0

UK and the USA along with all the global agencies. After his marriage George decided he needed to understand the shipping business and he and his wife sailed to Manáos and on up to Iquitos where Booths were now repeating the exercise of Manáos building a new port[48]. George wanted to test the routes over the Andes to the Pacific and made the journey successfully despite getting involved in a Peruvian Civil War. (The journey was used as the basis of a novel by Virginia Woolf). In Lima George Booth declined an offer to manage the country's Pacific port. This unwillingness to get involved in such projects matched his father's decision many years earlier not to get drawn into more infrastructure projects in Brazil despite heavy pressure. Charles was pleased to do the port work to support his 12 day shipping service, but did not want to get further involved.

This was a useful journey as both his cousins were to be poached from Booth Shipping over the next two years, Alfred to be Chairman of Cunard and Charles to Chairman of Midland Railway. The three remained great friends throughout their lives, and all had huge affection and respect for Charles. It would also appear clear that the relationship between George and his father was very close. Even after he took effective day to day control in the early 1900s he remained working closely with his father right through the war period when he and his father are noted as attending many meetings together.

From 1900 until 1970 it became the norm in the company to call the Booths by their initials and so Charles' grandson John Sebastian Macaulay Booth who was the last Chairman and Managing Director was always known as JSMB and is remembered as such to this day. This coincided with the other term for the company's senior staff which was the "Booth Men". This covered all the senior staff who joined the business from about 1885 onwards and continues with a few retirees who were still meeting for a monthly lunch in Wandsworth

[48] Booth, 1910

(where JSMB finally retired) in 2010. The concept of a united culture and a high level of trust had begun early in the company and was effectively a requirement of the fact that two continents and multiple locations were involved.

In 1910 G.M.Booth toured the US market and added sales offices so as well as New York, Boston and Philadelphia they had St. Louis, Cincinnati and Rochester, providing all senior sales staff with cars in 1914. Also around this time they invested in the US in Densten Felt and Hair Co and Gardiner-Lucas Glue & Gelatine Corporation.[49]

War changed matters considerably and temporarily forced the elderly Albert and Charles back into more executive action. George offered his services to the Government to sort out the supply situation and was made Deputy Director General of Munitions Supply and subsequently Adviser to the Ministry on Allies Requirements. Booths US interests and George's contacts were used for US sourcing (Booths charged 1% for acquisitions made in the US and nothing for their UK activity) and access to dollars. George had also been made a Director of the Bank of England so this whole period while a stressful wartime experience meant that he worked closely with a number of Prime Ministers and many Cabinet Ministers as well as building close friendships with top Americans including President Hoover.

If the first decade had been the decade of transition the second decade of the 20th century was the decade of change in personnel. Both the founder brothers died, Alfred in 1914. Charles returned to the business on his brother's death but was himself attacked by paralysis in the summer of 1916 and he died on November 23rd of the same year.

[49] John, 1959, p.86

Tragically Mr. Crompton and his family also died in 1915 when they were on the Lusitania. There is more to this than just the simple tragedy as it is fairly clear that the sheepskins that were on the manifest were in fact military accoutrements.[50] The ship was a Cunard boat, and Mr. Charles Booth was Chairman and Booths were routinely shipping skins back and forth across the Atlantic, so this would have been an easy thing to do.

The same month as Lusitania sank Mr. G.M. Booth had been made a full time member of the Armaments Output Committee by Lord Kitchener.

In 1917 in the UK Albert Booth and Co. made an investment in a UK glove tannery and felmonger in Abingdon, buying it outright in 1921. It made fine doeskin glove leather and along with fellmongering it also had small production of split grains and chamois. This allowed them to close their felmongery and tannery operation in Lincoln (separate from B. Cannon and Co the glue size and gelatine business they owned) and relocate it to Abingdon, but we have no detail of the rationale behind this move. Over the first two decades of the twentieth century nearly all the leather side investments had been into manufacturing and Booths really had grown on the back of the huge success of the chrome tanned kid.

The dynamic which George brought to the business is shown in a number of other acquisitions. In 1917 while in the US George bought J.G.White and company[51] Whilst US owned, much of its business was managed out of London. It owned tramways and power companies in Para, Manáos and many other Brazilian cities as well as 10 South American branches forming an important import and export business with South America. George Booth subsequently sold it back to James

[50] Simpson, 1972, pp. 43-53
[51] Crow, 1965, p. 176

Gilbert White in 1929, when White wanted to use it to tender for business in Ethiopia, but then took it back off White's hands for nothing in 1931. At that time along with a colleague, William Burton Balding, with whom he was travelling in New York when the repurchase option came up they decided to use it to set up the first UK investment trust. This original unit trust, the First British Fixed Trust, was launched on 23rd April 1931 by Municipal & General Securities, now known as M&G[52], in the depths of a nationwide recession. The launch price was 31 shillings and nine pence a unit. Between 1931 and 1939 nine more M&G Trusts were launched. George remained a Director of the Bank of England until 1946.

Also in 1919 Booths became involved in construction and bought the Unit construction company, so that after the sale of the shipping business in 1946 Booths were left with two quite separate businesses, with almost no overlap, of construction and leather.

For the first half of the 20th century the Booth Group remained one of the largest and most geographically spread leather organisations, mixing both tanning and trading in its activities but increasingly interested in tanning alone. The plants in the US continued and in the UK Wades and Turneys came much more closely integrated. Pavlova leather in Abingdon was also brought under the umbrella as later was Melrose tanners in Beverley. The company had strong relationships throughout the world with a balance of ownership and long term partnerships. John Sebastian Macaulay Booth (JSMB) was at the helm at the end of the Second World War and strengthened the management with a large number of key executives with whom he had served. The group began to concern itself with the quality of the raw material it was importing, part processed for its UK and US tanneries and this lead to investments in Africa. Out of this came a new

[52] M&G (formerly Municipal & General Securities) was founded in 1901 as the financial arm of a British engineering company. It launched Britain's first unit trust in 1931. M&G was taken over by Prudential in 1999 and is now the British and European investment arm of the group.

direction for the group towards investing in tanneries in Africa and New Zealand. Building strong relationships in these "colonial" regions was easy for the new management. The language was English and the business environment comfortable. Through this the Booth Company came to effectively be involved in a network from raw material to finished goods.

So the company entered the 1960s in quite a strong position seeing itself as probably the largest tanning organisation in "The Commonwealth". However it was in that decade that South Korea began to develop the blueprint for making leather and leather products very cheaply and exporting to the USA and the EU. This model was very successful for Korea and Taiwan and accelerated in the 1970s and 1980s the decline of tanning in the UK and the USA.

To fight off this flight of their market place to the third world tanners in southern Europe, especially Italy and to a lesser degree Spain began to accelerate the development of high fashion leather suited to help the better shoe and leather-goods manufacturers in Europe to hold a quality and fashion lead over the cheaper importers. Santa Croce in Italy became the world capital for creating the new trends in leather and their seasonal ranges were eagerly awaited and much copied. Part of the Italian skill was a capability to make highly valuable leather out of lower grade and cheaper raw material. Meanwhile US and northern European tanners struggled with the closure of their customers as the move of all leather using industries overseas accelerated. At the same time, they experienced diminishing access to third-world raw material as those countries started to produce their own finished products, or started to sell to the emerging markets or the Italians who could pay more.

So the Booth business, largely concentrated in the UK and US countries suffered. Their UK tanneries were houses in old buildings

which were hard to adapt for modern manufacture, and in town centre locations no longer suited for manufacturing of this sort. The ventures in Africa had struggled against a background of continuous political change and interference and New Zealand and Australian manufacture was suffering from Asian competition just as much as the EU and the USA.

With Booth's extensive global alliances and historic goodwill options for expansion and repositioning were available but with a relatively elderly board and no close family involved in 1981 it was decided to sell the business to Sir Kenneth Newton of Garnar Scotblair. Wades had just been closed and Turneys was shut as part of the arrangement and in the years to follow all the plants were to be closed for redevelopment. The only surviving elements remaining into the 21st century are Booth and Company in Peabody Massachusetts run as a small trading business by Ken Chapman, whose father Kenneth Chapman was one of the Booth Men who started with the Booths in the days of Surpass Leather in Philadelphia in the 1940s, and a Booth International business in Scotland whose activities are small and unclear.

This period so real growth in the Booth business as both the Booth Men working for the founding managers and the new generation used the many relationships established over many years to establish new linkages and strengthen many old ones so that the company could move into new areas geographically and new areas of business,

4.10 Consideration of Episode 4 1890-1920 and beyond

The outcomes of networking change the characteristics of a network, but because of the multiplicity of actors and the complexity of their different viewpoints, those outcomes are neither predictable nor controllable. The networking of each actor and their reactions to that

of others will depend on their unique network pictures. Each actor will bring their own baggage from the past. The case illustrates clear differences in the network pictures of different players the historical perspective provides insight into the outcomes of networking and the processes of network evolution.

The opportunity to be part of the immense growth of tanning in Philadelphia was to lead to a further re-orientation of the business albeit over a period of some 15 years. This would be the period when Booths moved from being primarily traders to being manufacturers. This was not just apparent from the nature of the business but clear in many of their letters and diaries (Crow, 1965 and John 1959). By 1920 the Booth Men, as the partners and senior managers came to be called, considered themselves to be tanners and manufacturers first and foremost. Other activities were continued but always considered more peripheral.

Some would say that the Booths created the boom in Philadelphia tanning through their ability to market the new chrome kid whose potential value they had identified from the long years of working with Dongola. In 1890 the Booth business was still based around being middlemen trading in pickled pelts, with a specialty in raw material for the Boston market. They had a business in tanning in Gloversville which had grown faster than they had expected but which informed the business rather than defined it. They also traded in a variety of other raw materials from various parts of the world. By 1920 this had changed with the purchase of Pavlova, the full ownership of Surpass, plants in Lincoln, a 50% share in Wades on top of the large Gloversville factory.

The purchase of Booth and Kent was not completed until Kent's death in 1886. Before that they had only provided finance guaranteed by the buildings and other assets. The change to being owners had a clear

impact on the company's belief in its ability to make money from manufacturing in a market place that was growing rapidly with the expansion of the US population and the associated urbanization. There is no evidence in the letters that they suddenly felt that control of manufacturing via ownership was a requirement. They bought the tannery since its business was a significant source of income to them via commission on raw material and the sale of finished leather and James Kent's family did not want to be involved after his death. It is clear that their confidence to participate, to comment and to back their hunches with investment greatly increased after this experience with the Gloversville tannery. A clear impact was that after 1886 the Kent relationships had to be managed by the Booths themselves or senior Booth's staff. It was no longer Kent who was interacting in large parts of the network it was now Booths. This tightening of relationships involved in the manufacturing side of the business appeared to coincide with a willingness to use different models of working. So in Philadelphia they became quite an aggressive agent for the sale of chromium tanned kid leather, getting involved in exclusive rights and branding. They were a significant supplier of the raw material. They must also have felt part of the development of the new chrome process given their support to Schultz whose patents were the foundation of the processing being done. So they moved from being only the traders servicing this manufacture into having their own skins contract tanning – something which had been common with the hide tanners in New York. Around 1894 they began to be drawn into supporting Surpass with investment monies, but they did not take full ownership until 1907. Nevertheless they made an excellent profit at either end.

As well as trading chrome leather from Philadelphia they introduced chrome tanning into Gloversville to process goat and kangaroo in 1894. This was to be the start of regular movements of staff and technology between the two cities. This helped them balance capacity

and help Gloversville where the glove business was starting to struggle with the arrival of difficult economic times. On the other hand the new leather was able to continue to steal market share on account of its features and benefits. In 1898 they also formalized a relationship with George S Wolff to make a modern version of patent leather which he made in his Philadelphia tannery and Booths sold under the brand "Ideal".

Around the turn of the century the Mathieus' Surpass Tannery burnt down. This was a catalyst for the younger Booths who were starting to get involved. They were helped with the decision to rebuild and promoted a major acceleration in activity to strengthen certain relations and increase the levels of activity.

The Gloversville tannery stopped making any glove leather in 1902 and focused only on footwear leather.[53] In 1904 Booths invested in a new plant with Wolff to create the Wolff Process Leather Company near Philadelphia. The Surpass tannery was rebuilt by 1904 as a full joint venture and in 1907 they bought it outright.[54] Philadelphia was then to be the manufacturing powerhouse of the group for four decades. This was the largest kidskin tannery in the world at that time and working with the most advanced technology. They had visitors from all over the world including a most famous one from Professor Procter from The University of Leeds in 1896; but they had themselves sent Charles Wade over in 1894 for the first of many visits and this was eventually to lead to the development of the Wade tannery at the old Whitemoor Leather Works in Nottingham. Producing chrome tanned leather on a variety of raw materials Wades was to remain tightly linked in to the Booth group until its closure in 1980.

[53] John 1959, p. 77
[54] John 1959, p. 79

They made additional investments in the US and in the UK in glue, gelatine and felt manufacture which were all based on bi-products of tanning. And immediately after the First World War they bought into and eventually acquired Pavlova leather in Abingdon, a felmongery and a skin tannery.

It was not just in leather that the business was developing. In 1903 the Booths established the Manáos Harbour Company, built the harbour there and another in Iquitos and expanded their shipping. [55]

Charles Booth had written early in the formation of the business that he wanted "a widespread but generally inter-connected business which provides a well balanced structure"[56] and this is what he was looking at in 1901 as his son started his participation.

This final period and the years after the war clearly show a very confident business: and one with a wide global area of interaction.

Subjective Interpretation

It becomes clear during this period that the Booths become very comfortable with management at a distance. Charles is steeped in social research and writing in London and yet is able to take a senior partner role in a company that now truly extends across the globe. Using modern communications to the full he appears able to keep in touch with events from Brazil to New Zealand as well as in the UK and the USA. He does make regular trips to the US and maintains a level of correspondence with his wife and business colleagues that makes it hard to imagine the long work days this makes for.

These letters along with the meetings in London and the USA also permit him to keep in very close contact with many key companies

[55] Crow 1965, p.39
[56] John 1959, p. 37

and individuals with which Booths are not trading. While they appear to have lost contact with Schultz when he went off to research other things and did not try to own or commercialise his chromium patents they stayed in very close touch with the way the industry was looking at chromium leather and how leathers produced from it might fit their market. No one in the huge American bovine industry appears to have been taking a similar interest. This implies that Charles Booth was choosing to maintain a wide and large network picture and was not limiting it to transactional relationships (Henneberg et.al., 2006). He also had clear expectations of the other actors whom he was watching and corresponding with.

The specific expectations which the key individuals in Booth and company held appear to firm as the company grew, and George Booth clearly displayed an approach of someone with a clear view of the future and quite definitive views of how other actors were most likely to react. While the company moved strongly into manufacturing it never had a stated policy to do so. The starting moves had been accidental and opportunistic. Booths had been happy to enter into joint ventures as with Kent, with Mathieu, with Wade and in Nuneaton with Johnson. Once they had become involved via James Kent in technology and seen how their involvement could help get his product into a new market, they were keen to see technology that satisfied market needs and continued to support it. Yet they did not try to own the technology but rather worked on a structure that could exploit it. They worked very hard to maintain good relationships with all their partners, to treat their workers well, and manage the business through difficult times. For although generally speaking the company grew well there were many periods in each decade where the financial pressures had been very great and many periods of severe economic downturns.

In fifteen years the order of importance of the Booth leather business was beginning to be reversed. Steadily during the 1990s the manufacture of glazed and matt kid from Philadelphia became the predominant activity centered on the large factory in Philadelphia with Gloversville moving to the role of a sizeable subsidiary. Pickled pelts remained but dropped to a quarter of the kid business. Within the pickled pelts business the export of grains grew and that of roans shrank, relatively and absolutely.

Looking at the leather part of the network in Figure 7 estimated in the early years of the 20th century we see the importance of the US involvement in manufacture. Management of the US was still in New York and the head office did not move to Philadelphia until 1927, but the scale of the operations, the associated profit and cash flow must have made Philadelphia key. With the shipping of skins from the Amazon coming in to East Coast ports and so directly to Philadelphia the movement of goods by Booths around the Philadelphia area must have been significant. Surpass soon became one of the largest tanneries in the world and traded on being the leading pioneer of chromium tanning with Booths working on how they could maximise the potential in Europe.

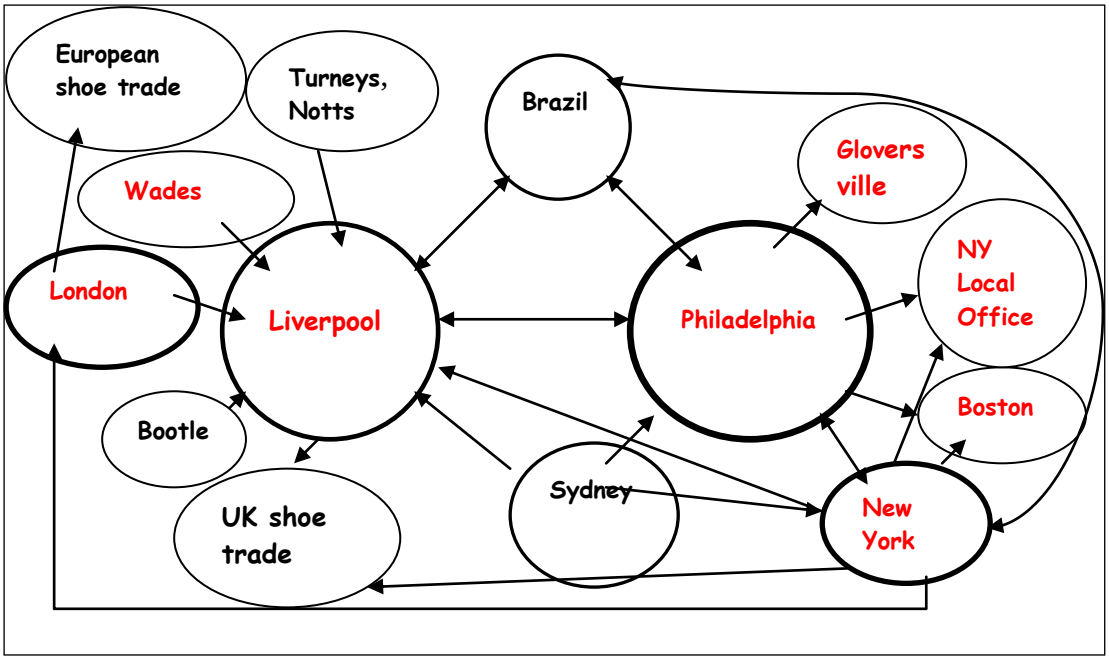


Figure 8: The Booth Co Network around 1900

Since Professor Procter had not managed to stir the UK tanners to do anything significant with chromium it was natural that Booths should do it themselves. The close personal relationship they had built up with Charles Wade and the money they spent sending him in the mid nineties to Surpass was well spent so they backed him to set up his own tannery to make this leather in Nottingham. This was a clear case of creation in terms of the 6Cs as would be other moves to bring chrome tanning to the UK. We do not know what Turneys thought about this happening in their own town but we do know that at this time Mr John Turney was hugely involved in his discovery of enzymatic materials for bating to replace dog dung, and it was to be over a decade before Turneys added a chrome section.

The view of the company, especially George M.Booth and J.S.M.Booth later was that this move towards manufacturing had been timely. With the establishment of companies like the United States Leather Company and the general growth and consolidation worldwide more US companies started to deal directly with their raw materials

suppliers. At the other end in places like Australia and New Zealand the raw dealers also wanted to deal directly with tanners. So the role of the importer selling to merchants and small tanners out of an office in New York steadily declined in the late 19th century and this decline accelerated in the first decades of the 20th century. This also coincided with a new generation of immigration into the US from Eastern Europe and Germany. These immigrants included a number of fur traders who also traded leather and chemicals and they appear to have built into that part of the network where the Booth relationships had weakened through their becoming tanners.

Relativity

The outcome of having links into a wide dispersed network, or series of networks was clear. The belief that ownership of factories or technologies was not a vital requirement to make success of the network was also clear. There is no statement in any correspondence examined in this dissertation that the converse was true – that too tight an ownership might create problems although there is equally no aversion to ownership displayed either.

At the beginning the Booths established many new relationships in the business start-up phase. These then became part of an organisational structure covering each of the two areas of manufacturing and trading. In its first fifty years the company never lost its strong Liverpool roots despite the rift when Charles moved to London.

The company grew in two clear geographic directions. One was to gain access to more raw material and the other was to expand into the centres where the finished product was distributed. The former took them to Brazil, India, Africa, China, Australia and New Zealand over above the European sources they had already opened up. The latter

meant opening in many of the newer US cities as they developed and then bringing finished goods back to Europe for sale.

Booths held positions in a very wide range of networks. Whereas at the start nearly all the actors were third parties by the 20th century many of the actors in the Booth networks were fully or partially owned. With all actors in the network being related this level of involvement and control was a considerable change on the 1860s structure where the steps taken by the Booths were more tentative and the subject of a great deal of discussion. They were also involved in many networks including leather, shipping, finance, politics, and business in general. Charles clearly felt this to be a strength, and his letters show that he liked to look at the big picture. "The secret of the eventual success of the business lay in the interaction of Charles Booth's long-term considerations with the sound practical judgment of his partners. If the tactics were theirs, the strategy was his" mused John.[57]

His hirings and utilisation of people suggest that he decided which relationships he wished to strengthen and how he would encourage certain repositioning. The work with Wolff[58] and Patswosky showed he was aware of what others were doing in the market and he was willing to get involved. We do not know the full detail of the mechanics of the building of these relationships but it is clear that there was a master plan. The Booths had an open mind, were watchful for opportunities and known to be worth taking a good idea to. Being at the forefront of introducing two new technologies they wanted to be sure that they missed nothing else that was new. This demonstrates that a relationship has a number of parallel and sequential interactions and we see with Booth and Co. a pattern emerging of them staying in close

[57] John 1959, p. 31
[58] http://www.brynmawr.edu/iconog/king/main2.html

contact with all those involved in technical developments in light leather (Ford and Håkansson, 2006).

This was summed up in a contemporary view of Booth and Co. in a book on New York Leather families:

"This firm are among the largest and richest in the business. They import skins from Brazil and other points, and manufacture at Gloversville and Philadelphia. No house has done more for the trade than Booth & Co. They have introduced the dongola and the patent kid tannage, and have been active in protecting the interests of the trade in tariff litigation".[59]

Decisions were made by Charles to stay in close touch with technical people in order to understand the options and potential of the new technology. Sending Charles Wade to the USA to look at chrome tanning in the early 1890s was typical. We also know that Sir John Turney was frequently in London on leather industry duties such as the building of the new college at Tower Bridge, where he made the opening address, so all leather technical matters, as well as raw material supply and the like would be part of the meetings they would have.

It also appears that they were close with their Banks on both sides of the Atlantic. It is hard to say that this was an equal relationship yet the Bank of America lunched Charles and his son on every US visit and there was never any discussion on changing banks despite there being so many industry specific banks in the US. Again the close relationship they had with banking circles would make the relationship of value over and above the trading alone, and this would have been emphasised when Charles' son became a Director of the Bank of England.

[59] Norcross 1901, p 208

Interdependence

Charles had deliberated expanded the business to give a diverse but coherent nature to it, so it could weather storms in different sectors and geographies. He had used his personal and company relationships to build the company's position in the networks which gave him access to a very wide range of resources, to knowledge and to a flexibility to move the business to fit the trends. This had successfully led to them transitioning more into the manufacturing side of the leather business just as the opportunities in trading for their size and type of business were diminishing. They had watched their networks evolve and they had reacted over time to try and find the best position to meet the future. Since their capabilities had increased as they extended the business their interdependence was clearly evolving, yet equally many of the other actors were also developing additional skills. These included Turneys, Wade and the US customer base where the footwear industry had steadily industrialized over the period and become much more sophisticated.

The problems they met were both positive and negative and included getting heavy goods speedily across the Atlantic to and from Brazil, monitoring the evolution of chrome tanning and deciding the right moment to get back into the market, searching for additional raw material, and managing economic and currency issues. They were generally able to respond quickly, but their ability to react – buying sailing ships to do a specific job, getting back into chromium leathers when the product was commercially viable – show a company watching the bigger picture and knowing where it had access to the resources it needed at each moment in time.

This complexity was managed using processes laid down by Charles who liked to lay out things in a simple straightforward way.

After the investment in Kent and Booth became successful it was protected as a major source of cash flow. When the introduction of chromium began the company was alert to the fact they had to get involved as this material might eventually take over from Dongola leather in the market. With Kent and Booth making good profits it might have been easy to overlook this danger and just enjoy the income being achieved in Gloversville.

So this was something they were willing to confront despite their own network position suggesting that this could do damage to their existing structure. The staff in Gloversville will have watched the huge and relentless investment in Philadelphia in the 1890s and 1900s with some concern.

The search for raw material also had to go on aggressively and many business relationships were established in Africa – Nigeria, Kenya – and in Australia and New Zealand. Booths offered these areas a unique opportunity to open up their raw material to the international market and make the most of them, and in return Booths were able to feed a demand that was growing quickly.

Frequently the Booths used joint ventures and partnerships to expand their activities; to "create" in terms of the Three Network Paradoxes. This fits well with their understanding of interdependencies and ability to know the actors which had the resources they needed to move forward into new areas. The level of "networking" was at all times quite intense even although it took over 20 years to take chromium to market from the moment Schultz received his patents to full ownership of Surpass with quite a number of periods of inactivity in between.

The relationships in the developing areas of Australasia and Africa meant that they were later to be a good position to develop into

tanning in many of those countries, but the wholesale move into being a major tanning group was eventually to create such a tight network structure that stepping forward to new emerging regions was to be impossible.

Jointness

It has been clear that jointness was very strong in the Booth group. All parties were pleased to be linked in to the company. The terms that make for good levels of jointness (Ford and Håkansson, 2006) – cooperation, trust, mutuality and goodwill –were very much evident. A structure evolved which allowed to Charles to work on his social activities yet maintain quite detailed control over the business, and later for his son George to become involved in city and political matters while still keeping quite tight reins on the business.

It is clear that they worked closely with all their suppliers with many adaptations in product and process that tied the two parties together. So the activity links amongst their many partners, orchestrated from either London or New York, continued to extend. A high level of experimentation in terms of both product and markets was evident. Jointness can appear to emphasis the dyadic aspect of networking (Ford and Håkansson, 2006, p. 14) but the relation between two actors is related to interactions with others. The jointness of related companies is seen clearly in the supply chain Booths set up where it was the interactions amongst actors rather than a major control structure which made it so successful.

As the business grew towards the turn of the century and beyond the company was too large to be managed even by these carefully chosen family members and professional managers were increasingly brought in. The culture that created the concept of “Booth Men” was one born of great care and attention in this matter. With a business in another continent trust levels had to be very high. In every area of

correspondence Charles Booth talks about and to individuals to the extent it appears that as well as seeing a business network he also had in mind a network of individual executives with skills and competencies that he had knitted together. His letters also explained his "innate love of system"[60] which was as discussed how he was able to construct and manage a complex business that from 1880 onwards must be seen as a sort of part time activity for him, as he threw himself into his social research in London.

The flexibility arising from good staff and an open approach put them in a good position to allow the business to evolve to fit the changes in the market. This is visible in two areas. First the company was able to survive quite a number of major periods of economic downturn (much of the last thirty years of the 19th century the US was in recession) and cash flow problems through being able to call on patient capital from bank and colleagues with whom they had built up a good relationship through previous interactions. Second the balance of the business both in industrial segments and in geography worked out that the company was able to make adjustments when required, and the structure proved quite flexible. So for certain periods some relationships were strengthened and others slackened. This was clear with raw material supplies with adjustments being made in supplies from Africa, India, Brazil and Australia as required and also in their ability to move chrome tanned kid into Gloversville when the demand for gloving declined. This was first tried in the 1890s when there was a recession but when gloving started to move overseas from Gloversville from 1910 onwards they were able to give the tannery two more decades of life.

In terms of jointness a Booths were in routine discussion with all partners on how to adjust to meet every change. As we saw with the roans earlier in the life of the company they were willing to put great

[60] John, 1959 p 87

efforts into adjusting the product and then into later setting up different distribution systems

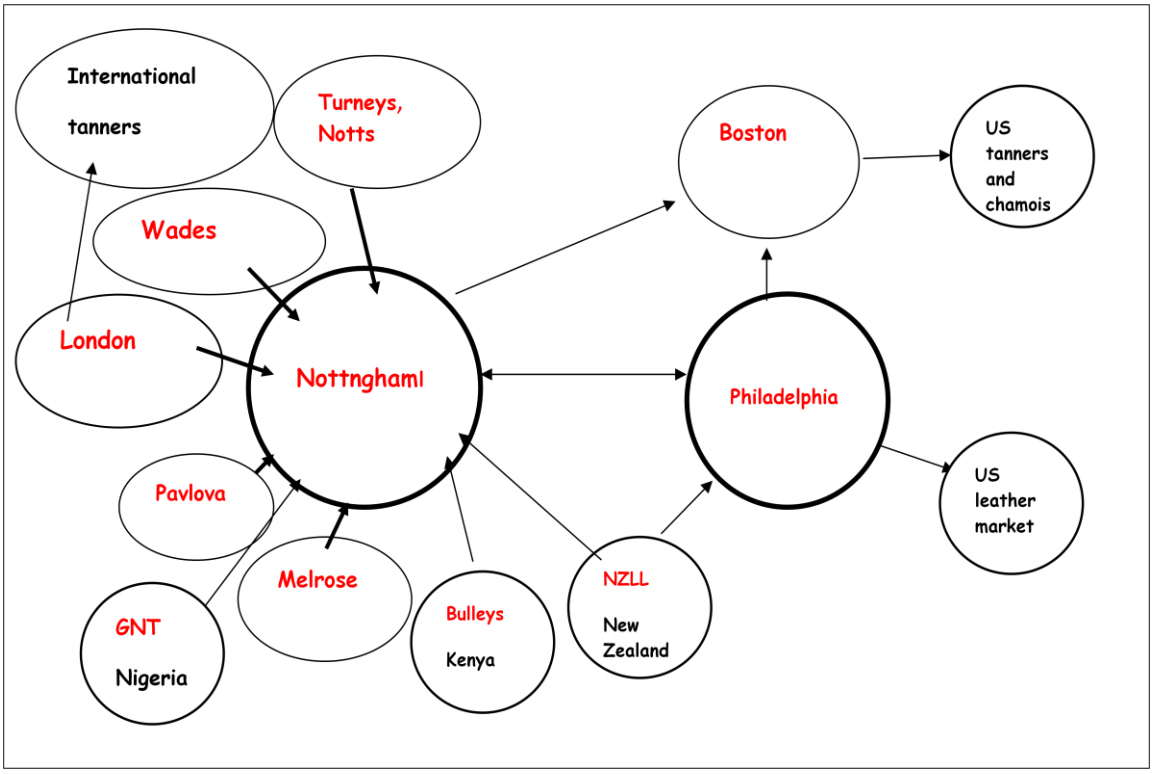


Figure 9: Booth Leather in mid 20th century

One consideration must be what Booths might have done had they not owned the Gloversville business. Figure 8 is an attempt to show the company as it moved further into the 20th century as it was considering closing Gloversville but getting reading to buy Melrose tanneries in the UK. Some of the US market had slowed for them as chrome tanned bovine shoe leather took over from smaller skins, but Surpass leather continued in Philadelphia and was still producing the large volume of 1800 dozen skins per day in 1946. Surpass closed in 1954.

From 1860 until about the turn of the century the company continued to build many new relationships. In terms of leather one could say these were all within the leather industry yet another view would recognise that in a fast developing world Booths were in fact searching

for relationships in geographically distant locations so they could link them into their US or UK business. Their “first-mover” position, high levels of loyalty and integrity meant that this stood them in very good stead wherever they went for many decades.

This activity was a clear search for additional resources to fit the needs of partners and no attempt was made to tie them in other than via good business methods, strong personal relationships and regular transactions. While this continued well into the 20th century increasingly, as seen in Figure 11 the company network became more tightly linked into the UK set up with some significant centralisation already happening well before this. This was partly because more of the businesses were wholly owned and partly because the roles of the US and the UK began to change as stronger leather industries grew up in places like Germany and Italy.

During the early 20th century the company continued to be able to create new situations including the quite diverse areas of Unit Trusts, management contracts in Brazil and the Building business. At the same time it was clear that in the later life of Charles, and much of the life of George they had to leave nearly all the day to day management to the “Booth Men”.

In this dissertation we have not identified quite why the company divested itself of both shipping and building and how it ended only with the tanning and leather sector. As stated the residual leather business was not well placed for the late 20th century world being trapped by its own ever tighter relationships and ownership, and it had lost its ability to diversify.

4.11 The role of technology and innovation

Traders in any technologically-intensive network are likely to have a difficult time at first and this was the case for the Booths. When the Booths started their trading business a deep involvement in leather technology could not have been anticipated. Yet the period was an age of discovery and technical advancement and the Booths, shown by their interest in steam, were not put off by technology.

The period between 1860 and 1910 is recognised as one of considerable worldwide technical invention so an interest in technology from a well educated and wealthy Liverpool family would be quite normal. Yet the initial Booth business was put together in conventional ways and at first they were distinguished only by their integrity and Charles noted love of system.[61] They followed the paths of others before them. The rather niche specialist agent and trader had became increasingly common in the USA in the 1850s and 1860s as industry developed. (Porter and Livesay, 1989)

The correspondence indicates that buying the Gloversville tannery involved the company in trying to take a wider view of their business network and seeing the potential for new technologies. Although the purchase had a tactical element, it had its basis in strategy and the Booth belief that they could exploit successfully any invention which Kent could make. At no stage did the Booths pretend to be technologists. Rather than seeking to acquire all necessary technologies for themselves, they self consciously relied on the technologies in the surrounding network. But they did ensure that in all their businesses they understood the implications of the technology involved.

[61] "with his innate love of system": John, 1959 p83

The leather industry had entered the 19th century with the same processes it had used for centuries. The arrival of steam power and the need to move to factories to produce higher volumes for city dwellers lead to new machinery introductions; some very innovative. Yet the underlying technology remained unchanged.

When Booths started to commercialise Dongola leather in the 1880s and chrome leather in 1890s the global leather industry was to be totally transformed. Both ideas were developed in the United States by a medium sized British company. Yet the Booths were only one element in this development process which started before them and continued outside of their organisation albeit they were an essential catalyst and big beneficiary. A major element in this came from the fact that their natural network horizon was defined by the area in which they were trading and was much larger than the individual tanners in the US, or of their other competitors. The Gloversville tanners were just that: specialists in the tanning of leather to be made up into gloves. The shoe centre in Boston could have been in another continent in terms of regular contact, but Booths had been selling successfully there and had opened an office in Boston in 1870. So Booths had the network links that went beyond the local and regional network inhabited by most of the businesses in the town.

Subjective Interpretation

From the start the view that Charles took in shipping and leather was one that accepted the importance of technology, and that technological changes of all sorts were likely to impact on their business. Given that in simple terms the actions of actors will be based on their on their individual interpretation of the actions of others and of the world around them (Ford and Håkansson, 2006) his letters and actions demonstrate an individual with vision and a very wide horizon of consideration.

The Booths' interest in technology applied not just to shipping but also to communications and, it is fairly clear from their early work to make UK roans more suited to the US market, to leather also.

Thus in his overview of the networks in which he was part Charles was in one part considering where the technologies lay and where and how those new technologies, be they a new steam engine, the telegraph or a tannage, would start to have their effect.

This meant that the Booths saw many actors in their network who had the potential to play a useful part as the company. At the time of the purchase of Kent and the development of Dongola they perhaps saw only Kent with his directly related technical resources but we can now look back and see also Kuttner as an individual actor with a wide range of commercial resources and Booths themselves brought additional coincidental technical resources.

Not all interaction is planned or even conscious (Ford and Håkansson, 2006 p. 15). When Kuttner met Schultz and built up a relationship over luncheon meetings in Racky's restaurant he had by then gained some considerable knowledge of the role and detail of technology in leather and its importance in end uses as wide as gloves, footwear and corsets. Schultz was to become an important actor and it is clear that while the initial work was highly speculative Kuttner was able to see the potential if a breakthrough were to be found. Equally the Booth view of the network was supportive of this relationship with a clever scientist and willing to build close links with no guarantee of a successful outcome. Booth's were also in close touch with the shoemakers' need for lighter weight and water-resistance leathers and were aware that tanners were having increasing problems with supplies of bark for their vegetable processes. Hence they were receptive to the inventor, in the belief that their relationships with

companies with different problems across the network would provide at least one set of interested parties.[62]

In the 1880s many other actors joined the scene in the introduction of chrome tanning as a commercial product. It appears that Booths, via Kuttner, made contact with all of them and transacted with many including Patswosky and Mathieu.

Relativity

In order to stay in touch with new technologies they built relationships with some excellent chemists and kept these alive. Kent, Wade, Turney, Patswosky and Mathieu were amongst those they stayed close to through this period. In Europe a lot of the research work was done within the chemicals companies in Germany. In the UK chromium business Eglinton Chemical Co. at Irvine in Ayrshire was the primary promoter of chromium for tanning. They manufactured dichromates and it was logical for them to license the German technology and try and make it work. They even built their own tannery in the Firhill area of Glasgow.

The Booths did not work in this way. They used internal resources and key individuals rather than links to chemical companies; and they had many such relationships. Over time it was clear that these relationships developed a very high level of trust and confidence.

Booths developed their interdependencies differently with different actors. The relationships with Turney and Wade which lasted over a century were different from those with Mathieu and Patswosky which were much more specific to a period and single products.

[62] Allan, 1995 and John, 1959.

Interdependence

Shortly after starting the business Booths recognised that they were dependent on their suppliers not just for a product to sell but also for the details of the technology embedded within the product. They found that they were not selling a commodity but an item with grading and technical characteristics which were highly specific and sometimes difficult to define and explain. For the suppliers the business was clearly significant enough for them to be willing to make sizeable changes to ensure that the product was perfected for the US market. They were also prepared to spend a great deal of time effectively teaching the Booths enough technology to be able to properly explain and sell the products to the US customers. Given the complexity of the problems and the potential costs of selling badly it is not surprising that the Booths took a great interest in understanding the technology

Booths first came in to contact with tanning technology in the UK when the product was being criticised in the US for various inadequacies. Subsequently they needed to develop an adjusted product to better fit the footwear market. From their wide distribution network they were one of the first companies to try and service the growing demand for city footwear. People living in cities did not need the same strong boots and shoes they use to wear on the farm and demand quickly grew for better looking softer footwear for both men and women.

In the US it is clear from the partners' letters that they got to know James Kent in Gloversville well through a number of years of trading. He was outspoken, experimental with raw material and with a reputation as a good leather chemist. As such the Kent and Stevens tannery in Gloversville was a major customer and the level of interaction between the companies was quite high as Booths were one of the best sources of reliable imported raw materials for him to work

with. Booths could have survived by staying with their banks recommendation to accept the loss and move on but both the jointness and subjective view they had built up with Kent as an individual gave them confidence to confront the situation and take a different route.

With Schultz Booths had no position of interdependence and the same could be said of most of the subsequent actors in the chromium development but it is clear that through the latter part of the 1880s they were actively networking in order to see if a better footwear leather than Dongola might be possible and to ensure that they were in the lead in putting it into their sales and distribution channels. Eventually we can identify a clear interdependence with Mathieu but by that time they had already established their global lead with the product. Although they were not the first to make a commercial chrome product their network for distribution was so much stronger than their competitors that finding a supplier a little after Foerderer launched Vici Kid in 1889 made little difference to their ability to prosper and grow faster than the competition.

Jointness

During the development of Dongola process Booths were in the position of ownership of the Kent tannery and being able to control the development. Given Kent's strong personality it seems clear that he was left very free technically while Kuttner ensured that the commercial and financial situation stabilised. This was not the case with the development of chromium where after Schultz had completed his patents they did little in house technical work to further commercialise Schultz's work. The celebrity impact of Sullivan wearing Dongola boxing boots had filled their capacity and there was little time for such work, and perhaps there was an element of detachment and rivalry from James Kent himself.

While from 1884 to 1889 little was done by Booths with chromium leathers what is clear is that they were actively networking and increasing their links. Quite a lot of this was in New York where they could easily meet with all the actors, many of whom would be well known to them; but it did also involve the start of developing much stronger links with Philadelphia where most of the lighter weight shoe leather was being made from kid skins.

In this period Booths were extending their linkages in to the footwear trade around the burgeoning cities of the USA selling Dongola at the same time as increasing their shipments of kidskins from Brazil and elsewhere in the world into Philadelphia for the Philadelphian tanners to make their standard "Morocco" kid. The Morocco product and the continued attempts to make chromium work on this material in Philadelphia were clear competitors to Dongola. This meant that Booths were supporting their own competition in building activity links with Philadelphia, conceding rather than confronting the changes that they saw evolving.

Chrome tanning, like other new technologies depended on a range of existing technologies and relationships for its exploitation. Because of this we see it became quickly "embedded" in a number of networks. The embeddedness of a technology is multi-dimensional and relates to the location of knowledge of the technology, the necessity of bundling it with others for its exploitation in different applications, and the evolution of the technology itself (Ford and Saren 2001). The control of these processes would have been beyond the control of Booths or any other company, especially if further innovation was to occur in line with the third Network Paradox (Ford et. al. 2003).

Håkansson and Olsen, (2011, p.2) conclude that "systematic managerial action appears to be the main driving force enacting and coordinating these complex interactions" where at least one actor is

needed is to provide the motion that moves things forward and the variety caused by combining elements from different areas. The Booth technologies highlight how new ideas come to the point of being commercially valuable only when a number of elements combine together and often this may take years or decades to happen. Booths interest in working at the raw material and the market end made them part of the "system of technology" as Cowan (1997) would describe it and that technology is not autonomous but resides in a system as Lundgren (1995) put it. Dosi (1988) would see a lot of support for his argument that "innovation comes from connections and an open mind". Booths displayed patience and maturity in letting ideas work themselves out. They facilitated, supported, catalysed and exploited ideas and always kept an open mind and an enthusiasm for novelty and invention. These innovations show that path dependency can be broken by meetings at the intersections (Håkansson and Waluszewsk, 2002). Right from 1862 onwards Booths had a high level of complexity and many intersections.

4.12 Conclusion

These four episodes provide good examples of the process of purposeful networking and of the outcomes of that networking. In particular they show how the complex process of innovation works in a network context. The next section looks at the general leather industry background for the period involved and a specific look at the bovine vegetable tanning industry in the USA which permits some comparison with the Booth Company in terms of the Three Paradoxes and the Three Aspects of Networking.

5.0 The United States Leather Company

5.1 Introduction

This section serves two roles. In the first part it provides a simple narrative of events in the leather industry and in the second it looks at the specific history of the vegetable tanners of North America who formed the United States Leather Company.

The narrative of the first section is intended to provide an explanation of the business environment in the leather industry into which the Booths entered when they started in 1860. It describes the major events and issues in the industry covering the run up to 1860 and occurring alongside the evolution of the Booth Company. A considerable amount of this material relates to the bovine industry which the Booths were not involved in although the technology used did overlap. The vegetable tanners in the bovine sector were slow to move over to chromium, not doing so until after the First World War when the benefits of chromium tanned leather in boots and shoes was proven.

As such the first section provides background material to the development of the US bovine leather industry roughly in parallel with the early years of Booth and Co. and prior to a radical change in the structure of the US bovine vegetable tanning industry. A large number of the tanners in the USA combined to form a very large business which was to be a founding company of the Dow Jones Average. This forms the second section which is a mini case study based on extensive analyses carried out by Donham (1930) and Dewing (1911) along with additional material from Norcross (1901) and Watson (1950).

5.2 The Evolution of the Leather Industry in the Late 19th and early 20th century

A complex network has surrounded the production and use of leather for many centuries. Participants in the network included those who trapped or farmed animals for their hides or furs. There were also local tanners who processed these and were often forced to cluster together by cities to limit the environmental effects of their "noxious" trade, or were often ostracised by society because they practiced it. Royalty were also closely involved because of their demand for fur and leather goods for their courts, and for many vital military needs. It is therefore apparent that historically many tanners and associated industries did work in local area networks for environmental reasons, as well as to have access to riverbank and other water sources.

Townships also wanted to acquire the technology of leather for reasons of industry or prestige and specialist traders operated in wide networks of relationships to buy and sell their wares. Suppliers of a wide range of raw materials including bark, alum, dyestuffs and even dog faeces were also involved. Many of these were members of guilds that sought to regulate trade, membership and technology. Every country in the world had and retains some form of tanning and leather industry.

The origins of leather tanning go far back into antiquity[63] and we have leather artifacts from the ancient Persians and Egyptians. The Dead Sea scrolls are written on parchment which is actually finely tanned leather, the Nubian tombs contained many leather artifacts and Otzi the ancient hunter whose body was unearthed in 1991 in the snows of the borders between Austria and Italy was clothed and shod

[63] www.mikeredwood.com/timeline

in well tanned leather items from a variety of animals. He has been dated at just before 3000BC.

The oldest evidence of tanning, a tanning yard with tools, pieces of skin and leather, acacia seed pods and fragments of oak bark, was discovered by the Italian Egyptologist C. Schiaparelli, and shows that the Egyptians used a vegetable tanning process similar to that used today. Tanning was depicted in Egyptian tomb paintings from 3000 BC and was known to the Chinese as early as 1000 BC. The Romans tanned with the bark from oak trees and with tannin from pomegranates.

The early tannages were primarily based on vegetable materials which contain a material called tannin which is extracted in the same way as we make tea (which also includes tannin and could be used to make leather). Materials were sought out that had a high concentration of tannin and in different regions and countries in the world different sources were discovered including oak in the UK, chestnut in France, mimosa in parts of the Mediterranean, and ultimately hemlock in the USA. The word tanning comes from the Latin “tannum” meaning oak bark.

Other tannage methods were discovered over time. The Inuit chew hides and create a mild tannage with enzymes and the American Indians used the enzymes and oils in the brain of animals such as deer. Tannages with cod oil – used in chamois – and with alum for fine glove leather were also developed during the middle ages.

Leather has in fact been a key technical material at most junctures of society until modern materials and plastics became available in the 20th century. Even in the 21st century leather remains valued in many end uses for a mix of its technical capabilities and its elegance.

The first clothes, implements and weapons tied together with hide, the first boats – coracles, drinking vessels, even some of the first wheels were held together with a leather rim. In the last 1000 years leather was a vital element in our daily lives and major employer until well into the 20th century. All travel involving horses required huge of leather for saddles, harnesses etc, and in the earlier years armour, shields etc were leather based. Chamois leather went under chain mail. It was not possible to go to war without leather and during the American civil war demand for leather was part of the reason that the US industry began to industrialise.

It is important to grasp the ubiquity of leather and its role in every-day life during these times. There was always a strong leather industry around the royal courts throughout the world as royalty wanted the best clothes and furs and finest colours. Even when the house of Orange was established in Holland in the early 19th century they persuaded the Laimbock family to move from the Tyrol in Austria to be glove suppliers to the Court. They settled in Scheveningen near The Hague which is traditionally the domicile of the Dutch monarchs and nobility, and set up their own shop near the famous Kurhaus. When the first European settlers moved to the USA the need for leather, largely imported at first, was a major issue with each town searching to find a way to set up a tannery.

In 1664 England purchased New York from The Netherlands. At that time some tanners from London came to the USA and began making leather and footwear introducing a seven years apprentice system.

In 1669 the first leather patent in the USA was granted for a mill to grind oak bark to be used in tanning. At that time in the US the potential of hemlock had not been discovered. Tanning occurred in small towns and villages throughout colonial America and the first tannery (detached from a house) was thought to be that built in Lynn,

Mass by a tanner called Miller in 1630.[64] A major area of tanning was to be found in New York.

It may also be difficult for us to grasp that leather was a necessity the European settlers had to produce for themselves. Yet that is precisely why tanners were among the first tradesmen sent by the Dutch to New Amsterdam. Because tanning was then a foul-smelling process, tanneries had been banished in 1676 from the little colony at Manhattan's southern tip outside of the city wall (Wall Street). Tanning requires fresh water, making the Swamp a natural site for leather manufacturers to gather. Related crafts within the industry also gravitated there, lowering transportation costs and making trade between leather firms easier. (MCNY)[65]

The Swamp lay just south of the Brooklyn Bridge, where the Southbridge Towers now stand, bordered by Frankfort, Pearl, Beekman, and Gold Streets. Two tiny lanes, Jacob Street and Ferry Street, as well as three blocks of Cliff Street, also ran through the district, but were subsumed into the Southbridge superblock. The old neighbourhood came by its nickname honestly, occupying the site of a swamp shown variously on early maps as "Kreuplebusch" (a corruption of an old word for a dense thicket in swampy ground), "Beekman's Swamp," or simply "the Swamp." Though it may now be impossible to imagine, it was a favourite spot for berry picking, duck, and turkey hunting.

Here only upper leather for footwear was tanned initially with all sole leather coming from London. Cattle hides, calf skins and deerskins were processed. The Swamp was an important area. George Washington lived there in 1798 with many of his cabinet nearby. His

[64] Hoover, 1937 p. 126
[65] Museum of the City of New York MCNY (November 2006) http://www.mcny.org/Exhibitions/nytradeoffs/swamp.htm

house in No 3 Cherry Street was close to Frankfort Street in which all the first tanneries were located or in contiguous streets.

By 1800 New York tanners were adopting the use of agents in the hinterland to increase their access to low-cost hides and skins. Traditionally, the city's butchers had brought their hides to tanning establishments conveniently located between the slaughter houses in the Out Ward and the markets down town in a region in the fourth ward bordered by Roosevelt, Beekman and Chatham Streets. With its water courses to the East River, the area provided tanners with the necessary water for tanning as well as a ready stream to carry away the pernicious toxic wastes. In the heart of the Swamp was Cliff Street with dozens of tanners. Originally called Skinner Street, it was the place where hides and skins (often with horns and tail still on them) were offered for sale by butchers. The hides were collected all over the city, brought to the Swamp and trimmed and salted down in the merchants' cellars. Along with the Collect Pond, later the Five Points slum, and the Bowery, the olfactory miasma of row upon row of open-air, oblong tanning vats in the Swamp became a well-known New York sensation. (Day 2001, Norcross 1901)

No tannery had a roof and the hair was removed in pits in the ground and the tanning was done in long wooden boxes. To make good upper leather it was thought necessary to leave the leather in the tanning vats for a year.

The Swamp became a place in political history at the start of the 19th century with Groups such as the “Swamp Clique”, the “Democrats” – otherwise known as the “Loco Focos” – and the “Equal Rights Party” became active in the early part of the century and famous names such as the Astors became involved in the area[66]. This coincided with a more serious separation of trade and manufacture. Tanners had

[66] idem

dabbled in selling “hides, leather and oil” according to Norcross (p15) especially bringing sole leather into New York from oak tanneries in Baltimore and Philadelphia. Now the industry started to find a class of merchants who dealt in buying hides and selling leather. They became well established over 25 years in the early 1800s and were the pattern for all the USA. Quite often this involved having the hides “contract tanned” by the tanners and this is a system which survives into the 21st century.

In 1810 the streets of this area of New York began to take on an “elegant”` look and the rich merchants travelled to Boston (38 hours, US $15) Washington daily (US $24) and Philadelphia overnight (US $10.50) to link the industry together.

In terms of trying to understand the connections that were built up in the 19th century leather business transportation was a major element. Before the railroad was built to Albany no leather came to New York from upstate after the North River froze in the winter. Massachusetts shoe makers bought the leather in towns such as Albany and Troy and it was taken on sleds towards Boston to be made into boots.[67]

There were quality issues when tanners tried to beat the freeze by shipping before the leather had been fully processed and occasionally Catskill tanners would move tanned hides down the river on sleds. In general there was little business done by merchants in winter in New York and they often shipped leather to Boston by schooner without even bothering to properly roll or lay it out. Norcross thought that Long Wharf harbour in winter often held higher stocks of New York companies’ leather than New York itself. The completion of the Erie Canal in 1825 made New York the crossroads of transatlantic, coastal, and internal U.S. trade. It nourished the city with a rich diet of goods

[67] Norcross, 1901 p.64.

and capital as well as being of specific importance for the location of tanning.

Trade in finished goods started to accelerate about this time. In 1818 the sloop Delight with a shoe consignment from Haverhill, Mass started the Massachusetts to New York footwear export. The footwear industry in the US was changing in the early 19th century in the US. In general craftsmen often worked from home and Mintz (2007) explains that urban artisans did not draw a separation between home and work. "A master shoemaker might make shoes in a 10-foot square shed located immediately in the back of house." The changes of the 1820s and 1830s which were a little behind Massachusetts are described for Rochester, New York. "Instead of producing an entire shoe, a master would fit a customer, rough cut the leather uppers, and then send the uppers and soles to a boarding house, where a journeyman would shape the leather. Then the journeyman would send the pieces to a binder, a woman who worked in her home, who would sew the shoes together. Finally, the binder would send the shoe to a store for sale to the customer."

An important leather of the time was "Morocco" a hard grain goat skin developed in North Africa and Spain largely on Nigerian goatskins traded across the Sahara from the 5th to the 13th centuries. It was suited for footwear production as well as leather goods and other items. Moroccan leather manufacture came to the Swamp in 1790 and grew well until the war with England in 1812-15 when the British blockade of New York stopped the import of goatskins. Instead the tanners turned to making a similar product on US domestic sheep skins. Because of the war induced scarcity these skins sold at a high price and the industry of Morocco from sheep grew and thrived for many years. In 1832 New York was badly hit by Asiatic Cholera and business largely ceased for a while, except in the Moroccan leather tanneries where it was discovered that few workers got sick. The

negative environmental view of tanneries receded at that time, in a not dissimilar way to the tanners in Nottingham during the Black Death some centuries earlier.

It was also between 1820 and 1850 that tanneries grew up in the Catskills and other up-state New York destinations as according to Norcross "every owner of a thousand acre or ten thousand acre track of hemlock land could build a tannery, get a few skilled workmen from Massachusetts and find a Swamp merchant who would stock him with hides"[68].

This move to put tanneries away from the city came about in large part as a result of the gentrification of New York society and a desire to avoid the smell of the tannery while enjoying the smell of the leather and the money it made. Tanning with oak and hemlock required bringing in bark to the city so why not take the hides to the forest? Indeed so much hemlock bark was required to tan each hide – a cord of bark was needed for four hides – that it was cheaper to bring the hides to the forests and mountains than to bring the tannin to the hides.

There were many other day to day pressures on the tanners. Day (2001) explains it nicely: "One (industrial trajectory), as experienced by the tanners, was towards regional specialization with many of the most noisome elements of tanning exported to the rural hinterlands of Pennsylvania and upstate New York. Led by Jacob Lorillard, Gideon Lee, and Henry and John Jacob Astor, many successful tanners were gradually shifting their roles from traditional tanners to emergent commodities brokers and real estate speculators - one hesitates to call them burghers. Tanned hides were well-suited commodities for this transition because salted hides lasted better than salted meat, and the salting did little to alter the commodity's ultimate value. A final

[68] Norcross, 1901, p. 64

barrier inhibiting transition was the overhead of transportation; with the completion of the Erie Canal in 1825, costs had plummeted. These infrastructure changes made it possible for New York City merchants to have tanning done completely in the Hudson Valley or Eastern Pennsylvania, leaving Swamp denizens such as Astor and Lorillard to act more as merchants, financiers, and commodity and real estate brokers. While tanning continued in New York City through the 1840s, its prevalence declined noticeably."

After the Revolution most of the oak and hemlock supplies near to the major towns in New England and along the Hudson were exhausted[69]. As the country grew and as the hemlock supplies vanished several tanners set up huge factories in the Catskills. By the 1860s the industry then started to move to the Adirondacks and Fulton County, but this era ended almost as quickly as it began. By 1880 most of the hemlock tanners were moving to the southern tier of the Midwest where forests remained.

It was realised that if one salted a hide – which kept it in a good state – it would be just as easy to ship the hides to the hemlock and oak forests. One New York tanner by the name of Gideon Lee who had learned his tanning in Amherst and Northampton in Western Massachusetts set this in motion. In 1817 ten years after he had come to work in the New York leather trade he set up the first US joint stock company to tan leather named the New York Tannery Co. With his partners they bought land in Greene County, NY and built a hemlock sole leather plant able to produce 5000 hides a year which they did in 1818 using hides from the Argentine. Gideon Lee was mayor of New York in 1833-4.

The American classic "Two Years Before the Mast" tells the story of a two year trip to Mexico and California from Boston to collect raw hides

[69] From: Fulton County Museum, Gloversville, New York. "Tanners of World Renown"

there in 1834. In New York the firm of Willets were the primary dealers in Californian hides in New York from 1840.

This meant that the New York dealers in domestic hides moved towards salted hides bought at auction for delivery to distant tanneries and little fresh trade was done. In 1837 Norcross tells us that the price had dropped so low that butchers refused to sell and instead formed the successful "Butchers' Hide and Melt Association", which presumably means a gelatine works.

The need for good bark to tan leather and the idea that it would be better to bring the hides to the bark created a wandering leather industry. The tanners followed the forests (McMartin 1999) through Delaware and the Virginias, west across Massachusetts north along the Hudson. From 1822 on the Catskills became a key destination and from about mid century further movements were made upstate to the Adirondacks and on to Pennsylvania. By the end of the century locations in Michigan and Wisconsin were being sought out.

In 1827 the Lafayette tannery removed to New York and was owned by Mr Abraham Schultz and a colleague. Mr Schultz and his family were to become major players in the industry for over a century and some of his plants were subsequently to form part of the United States Leather Company. One of their tanneries, Young and Schultz, founded in 1838 was the first of what was to become known as union sole leather plants which used a combined tannage of hemlock and oak. For 25 years it had a near monopoly of the "union" market.

Schultz was keen to push technology forward and offered prizes for improvement in the manufacture of vegetable tanning methods using hemlock and the combined hemlock and oak tannage known as the "union" leather.

Perhaps at this stage it is valid to examine the US leather industry at the mid century stage to clarify the business that the Booths saw and decided to enter. A detailed report on the industry appeared in the New York Times of March 31, 1856. First it noted that the nature of the tanning industry was such that traders could only turn over their money twice a year and three types of trade were normal. In the most common the trader bought the hide and owned it through the tanning process which he did on contract, in a second the dealer bought the hides and sold the finished leather on behalf of the tanner and paying the total to the tanner less five per cent for tanning and six per cent for selling. The third was to work on a fifty-fifty basis with the tanner.

By this time what was called upper leather for shoes had largely moved to Boston and its satellite towns such as Lynn and Salem. Newark, NJ was at that time the major source of patent leather which was important for carriage trimming and carpet bags. New York remained the headquarters for sole leather. This is not just the case for the USA but on a world-wide basis where it was estimated that the New York trade was double that of Antwerp which was the principal leather market in Europe at that time.

The bovine raw material used had two main sources. Domestic hides were largely used for oak bark leather and tanned in Pennsylvania, Maryland and New Jersey. Hemlock tanning which gives a distinctive red brown colour as opposed to the whiter oak was mostly carried out in New York with the location of this having moved from the city now wandering around the State in search of new forests. For these foreign hides were used mostly from Latin America and imported dried or wet salted.

A tannery “of the largest class” used nearly a square mile of hemlock trees per annum, measured as not less than 6000 cords. Tanneries were always set beside streams to obtain motive power but in the

1850s steam engines had been widely introduced, especially after it was realised that spent bark, with the vegetable tannins removed, in its wet state was an excellent fuel.

In noting that the tanneries had moved to the bark rather than bringing the bark to the tanneries the Swamp had been steadily rebuilt with spacious leather warehouses. Initially the tanners had moved not too far from New York but the Eire Canal and adjacent railroads had meant that tanneries had been able to move even further away in search of bark. The "celebrated" tannery at Prattsville "was abandoned a few years since, owing to the failure of the supply of bark in the vicinity."

Prices had been held low throughout the 1840s and this is explained as a consequence of the improvement in efficiency and output of the tanners who had managed to reduce the tanning time down to five months and were able to achieve a better result with 25-30% less tannin.

The need for small skins was identified in a curious way – the shortage in Europe of rat skins for gloving. Gloving leather was at that time mostly tanned with alum as vegetable materials made a leather that was too thick and hard. Kid skin tanned with alum had become the foundation of the glove industry and the world retail centre for them was in Paris. A variety of skins were used for gloves including dogs, rats (most likely actually kangaroo), deer, pig and kid. Because of a scarcity of rats in Paris the price of imported kid gloves had risen strongly and there was pressure in the US to exclude these finished gloves from high duties but to encourage the US domestic industry to import raw skins of all sorts to develop a stronger domestic industry. This created the backdrop which the Booths found when they went to New York mid-century, and a good potential market for importing pickle grains from the UK.

It is said that the 1860s to 1920 period was a golden age of invention (Smil, 2005) as well as of globalisation (Friedmann, 2000) but big technological changes in the leather industry began towards the end of the 18th century with the Royal Society of Arts (RSA) and the Royal Society both promoting improvements in quality, time utilisation, and methodology in leather manufacture.

Early in the 19th century some important developments took place. 1805 saw the discovery of catechu by Humphrey Davy. This was a cheaper alternate tannage to oak whose usage was causing environmental issues because of the damage to forests in places like Wales and the South West of England. Davy did not patent his inventions or technology but viewed them as a donation to the benefit of mankind. There then began a much more fundamental search for alternate tanning materials and methods. Davy's text book on tanning became a definitive guide to tanning by vegetable methods. Another key invention of the period took place in 1808 with the invention of the splitting machine by Samuel Parker. Mr. Parker was from Billerica, MA, USA. Splitting allowed thick cattle hide of up to 4mm thickness to be separated horizontally into two layers. This allowed the bottom part to be used as suede rather than being thrown away as previously. The first mention of splitting in the UK is in a House of Commons Select Committee report of 1816. On the processing side a Revenue Commission report of 1824 described "a rapid process of tanning with hot liquor." By 1837 McCulloch (1837, 118) noted that process time had halved since the start of the century.

Despite this the general view of the industry in the United States in the first half of the 18th century was quite negative. Quoted by Rotenstein (1998) Welsh describes tanning up to 1850 as a "craft that resisted change." In1900, U.S. Census Special Agent George Houghton observed, "It is a curious feature of the business that, while in nearly

every other industry advantage has been taken of labor-saving devices as they are perfected, leather manufacturers were inclined, until about 1880, to discourage any attempt to supersede manual labor with machinery. They preferred, also, to adhere to the formulas and tanning processes which had been handed down for generations from father to son ..."

Around 1809 Talmadge Edwards began the manufacture of leather gloves in Johnstown, NY. This town along with Stump City nearby (to be renamed Gloversville in 1888) soon became the major area of glove making in the USA. Leather tanning had been carried out there using local hemlock bark and then changed towards oil tanned buckskin leather. Glove making was then set up to make use of this buckskin leather and the tanners began over time to make large quantities of sheepskin glove leather, for which they needed imported skins (White, 1956).

In the winter of 1847-1848 when the Mexican war began to push up demand and records show that leather from up state was brought down the Hudson River to the Swamp on sleds. For two years demand was very strong after a long period of low prices.

In the south Boston area the footwear capital of the world developed in Brockton in the latter half of the 19th century. This came after developments on the north shore in the earlier decades of the 19th century as shoe making moved out of the farmhouse and into the factory. A feature of this was that well breed young ladies came into the town to work in the factories. Except that the ladies were better educated and went into Boston to the theatre 150 years ago, this process of employees, often young ladies, coming off the farms to work in factories is identical to what happened in South Korea in the mid 20th century and to what is happening in South China today.

Prior to the 19th century the leather industry in the US had been craft-based. Farmers tanned hides and turned them into shoes and other goods on their own farms. Itinerant shoemakers traveled around and helped farmers with a lot of animals make shoes from them. They would also help farmers to trade products and a small export trade took place with the southern colonies that preferred to focus land and time on cash crops.

Three sources are used by Hoover (1937) to explain the look of tanning in the early Colonial days:

- Cattle were slaughtered locally, and every community soon had at least one man who sank his vats in the stream running through his back yard, and tanned hides in the crude fashion of the day. (Donham, 1930 p.474)
- A tannery or two seem to have been uniformly a part of the economic outfit of the inland town. The working dress of the people was largely composed of leather garments and a large part of the material came from the hides of animals slaughtered on the farms and prepared at the village tannery (Bidwell 1916, p. 261)
- Leather manufacture began with the first generation of settlers in the colonies. In accord with the policy of government supervision of industry, Virginia, in 1661, required each county to provide for at least one tanner, currier, and shoemaker (Keir, 1920)

Continued immigration from Europe, urbanization and rapid population all lead to the creation of centres for shoemaking. These were established, particularly around Boston and other growing cities. Young ladies began to leave their farms and work in these shoe factories, returning home after a year or two in order to get married and settle down.

In February 1859 the tanners of America held a banquet at the Metropolitan Hotel[70] and both the guest list and the speeches indicated the breadth and depth of the industry at that time. The industry had many national and global linkages.

There were 340 guests and the names included key people such as Schultz, Miles, Hoyt, Healy, Armstrong, Thorne, Fraser, Palen, Buckley, McCoy, Bailey, Kumbel and Butman and tanners came from Baltimore, Boston, Lynn, and Philadelphia.

Norcross tells us that speeches were given on Cuba and the Suez canal (which finally opened in 1869) predicting factories being built using steam power, of labour saving machinery, and about the potential for future leather trade with Europe.

A Mr. John Armstrong discussed some of the items involved in shoemaking and their origins. His talk was based on the fact that increasingly the US was becoming more self-sufficient and with new machinery in the shoe factories more efficient. This latter to the extent that while leather continued to rise in price the cost of footwear continued to decline. He praised international commerce. "The cattle of South America, the kips of India, the calves of Europe, the sheep of England, the goats of Mexico, the seals of the northern coasts and isles, the horses of the great Southern plains, the cattle grazing on a thousand hills, all have to contribute their coats to shelter our feet. We send to England for lastings, thread, and tools; to France and Germany for fine leather; to Italy for silks; to Russia for leather and bristles; to the Straits for oil. Vessels take long voyages to bring us hides from the Golden West, from Africa, or to transport Japonica from India, the Sumach from Sicily or cochineal from Honduras."[71]

[70] Norcross, 1901 p.217
[71] Norcross, 1901 p. 220

Some of these developments were to come unexpectedly quickly. The civil war in 1862-5 created an unprecedented demand for leather and catalysed the leather industry network. Multi story tannery mills started to be built with lines of new machines driven by steam power offering significant levels of mass production never before imagined.

After the civil war the leather industry went largely into depression as the government stopped purchases of boots, shoes and saddlery of all types. However the top tanners in saddlery noted a demand for the finer qualities of harness leather in and near the large cities and that footwear upper supply and demand remained in good balance. The clever shoe makers had reduced their making of military footwear and had limited stocks left. Instead they found steady and increasing demand as citizens in the north and the south returned to normal living. Sole leather did suffer a bit, declining from a peak of 45 cents a pound for hemlock to 35 and from 60 to 45 for oak.

Rapid expansion of the urban centres created new environmental pressures and in 1866 the New York State legislature set up the Metropolitan Board of Health.[72]

As Day explains: "By the late eighteenth and early nineteenth centuries, with significant population increase, members of the Common Council acted with affluent butchers and tanners, focusing on what they viewed as their most important task: providing a dependable and secure supply of meat products to the city's carnivorous population. At a time when public health warnings were viewed with scepticism, civic leaders continued long-standing patterns of resource allocation. Moreover, given the influence of wealthy butchers and tanners, members of the Common Council were caught in almost irreconcilable conflicts of interest. Until the mid-nineteenth

[72] Day,2001 p. 156

century, municipal authorities failed to adopt meaningful reforms of the nuisance trades because they were wedded to ancient regulatory regimes dating from colonial New York which maintained valuable, exclusive rights and privileges for all concerned but also gave city officials a clear, vested interest in allowing the nuisance trades unimpeded production."

Members of the Bayard and Varian families had figured prominently among the butchers since the early 1700s. Among tanners, the Beekmans and later the Astors and the Lorillards significantly influenced the course of the nuisance trades in New York City.

By the late nineteenth century, the leather industry had grown into one of New York's largest. Though little leather was still tanned in the Swamp, the district had become the centre of the American leather market.[73]

This period up until about 1880 is what Hoover (1937) calls the tanbark period. Over most of that time tan bark was much more available than hides so the tanning industry gravitated towards the urban areas where the animals were slaughtered for meat for the growing communities. Thus by 1879 the states of New York, Pennsylvania and Massachusetts tanned 60% of the hides and 80% of the calf, goat and sheep produced in the USA.[74] For major tanners of hides the process time was twelve to eighteen months and access to water and trees was needed, so the movement away from the cities as they become more crowded and concerned about odoriferous industries was natural. Salt preserved hides well so the moves to places like the Catskills had great logic. To tan 200 pounds of leather – the traditional vegetable tanned leather is still today sold by weight –

[73] MCNY
[74] Whitten, 1990.

requires 1 ton of bark so as Norcross stated a location on a river in oak or hemlock forests was the best place.

The tanners had three occurrences to deal with after 1880. Before that there had been some mechanical introductions but few real advances other perhaps than steam being used to drive the old equipment. So the industry fundamentally had changed little over 1000 years other than both the tanneries and shoe making had started to move towards proper factories rather than continuing with home craft production. The changes after 1880 form an important section of Hoover's (1937) location analysis and are carefully analysed by Whitten (1990).[75]

- Around 1880 tanbark extract was developed. This involved extracting the active ingredient from the bark. As a result the weight to be transported reduced to less than 10% of the original bark. This type of extract was especially good for heavy cattle hides and meant that tanneries could be located where the hides were being produced rather than near the bark production centres.
- With the introduction of the railroad refrigerator car the meat packers started to move to the mid west. The ready supply of large numbers of hides induced many tanneries to relocate to Milwaukee, Chicago and St Louis
- The introduction of inorganic tanning (chrome) commercially in the 1880s. As the Booths were the first to discover when it was developed in the Gloversville plant is was most effective to treat lighter skins and not until around World War I and after was it used for heavier hides and skins.

The timing of the start of meat packing in the USA is often overlooked. Their large strong businesses were to be a major influence not just through until the early 20th century but to the present day, where

[75] Whitten, 1990, p. 215-216

they remain large and dominant industry forces. It was actually in 1867 that Philip D. Armour started in Chicago and this town and Milwaukee were destined to become major industry centres.[76] More significant, perhaps, was the later introduction of the use of ice to keep the meat cool allowing shipping across the nation.

In 1873 Jackson Schultz of the New York Swamp became Chief Commissioner of the United States at the World Fair in Vienna and his work there initiated US leather exports to Germany raising them from a paltry US$100,000 to US$4m with exports to the rest of Europe quickly rising to over US$8m alongside. Records show that sole leather exports to the UK rose rapidly and the Union League Club in New York had a dinner for him which was attended by fifty members of the trade representing "leading houses in this and other cities"[77]. At this dinner Schultz noted that forty years ago in the 1830s "it was the custom for ships to buy hides for ballasting, and sell them at a large profit on the other side." He considered that currently (1873) US tanning was still behind the UK but ahead of France and Germany. One major belief coming through in the US industry was that labour saving machinery and managerial approaches to production were giving a real USP to the US tanning industry in the international market. This is a distinct change in approach from what Welsh had written about 1800-1850.

In 1876 Schultz wrote a definitive text on the manufacture of leather and in 1880 he offered three gold medals for technological advancement related to tanning with hemlock and the "union" method. He died in 1891 at the age of 75.

Nearly all of the issues that we read about today related to China can be identified in 19th century USA as the industry moved through the

[76] Shoe and Leather Reporter, December 25, 1937
[77] NYT April 16, 1873

region. Unfair price undercutting based on cheap labour was the loudest complaint. There was exceptional price pressure on the shoemakers in the original tanning and shoemaking towns just north of Boston in the face of cheap labour from the western states. Lynn used to sell shoes to the west at US $2 a pair but as shoemaking began in mid west towns this price could be achieved locally, and so the price from Lynn had to be reduced to US $1.75 and before long it dropped more. "They do not want to see a shoe over US $1.25 and soon there will be no place for a shoe above US $1.00". Lynn could not compete with these prices as the labour in the mid west was so much cheaper. Lynn demanded a 60% tariff on all shoes from the "west or south" imported into New England and nearby regions. They did not get it[78].

The UK leather industry had also seen many changes in the 19th century. Having had a good few centuries of growth it had developed more strongly than its European counterparts[79] despite being more heavily regulated and more fragmented. In 1813 the average tannery workforce according to a Select Committee enquiry into Excise Duty on leather was only six or seven[80] and these they reported were the largest plants. At the start of the 19th century only 0.2% by value of British production was exported. This was far less than was the case in Europe where competition between tanners in different countries was much greater and lead to greater demands and needs for modernisation to which their governments responded. By contrast the UK tanners remained largely complacent and there was little pressure for integration. As Rimmer[81] states "no one currier wanted the whole of a tanner's output, any more than a single shoe-maker or harness-maker wanted the whole of a currier's output. Variety of product and the extent of the market limited the scale of operations more

[78] NYT Aug 28, 1898
[79] Gomershall, 2000, p. 2
[80] Rimmer, 1960 p. 119
[81] idem, p.121

effectively than excise regulations." UK production is thought to have grown very slowly in the later part of the eighteenth century and not at all in the first decade of the nineteenth century. But after the Napoleonic Wars ended growth, spurred by domestic demand, it grew by a steady 3% per annum up to 1850. This is interesting as the population only grew by 1.5% so the per capita consumption of leather was rising. This meant that industry volumes grew four fold in just one generation increasing the demand for hides and oak-bark. By the 1840s the UK tanners used more foreign than domestic hides – a situation which was to remain until the 1980s.

As in the USA there were a limited number of technical improvements in tanning in the first half of the eighteenth century with rapid processing and crude splitting machines being introduced but shoemaking remained an unchanged craft largely done at home or in very small workshops.

McCulloch (1837) suggests that the time of vegetable tanning "had halved in recent years". Although most tanneries remained small in the UK a few by 1850 had emerged employing more than 100 people. In Leeds in 1857 a new plant was built with one block seven stories high with a steam engine and splitting machine. Called the Sheepscar Spanish Leather Works it produced sheep, goat and calf for furniture, hat linings and textile rollers.

In discussing the tanners in Leeds Rimmer (1971)[82] gives us some evidence of the reasons for location. "Their location was dictated in part by water requirements and sometimes by proximity to woods, and in part it arose from the offensive nature of the trade which made it unwelcome in a densely packed residential and commercial district."

[82] Rimmer 1971, p 123

The UK industry received a boost in demand during the Napoleonic wars but then promptly collapsed to such a degree that Parliament intervened and progressively removed all duties and regulatory legislation by 1830 in the hope of getting it back on its feet. Some major centres such as Nottingham had lost all their tanneries by this time. This was a shock to the nation as tanning ranked as a major industry and at the start of the century leather was the second most important manufacturing industry in the UK.[83] After these changes the industry began to expand again and this coincided with increasing foreign trade offering new sources for raw materials and the chance to look wider for exports. In 1937 this had changed and McCulloch (1837)[84] maintained that "the leather industry ranks either third or fourth amongst those carried on in the country, being inferior only, in point of value or extent to those of cotton, wool and iron, if it not be superior to the latter."

In Leeds tanneries numbered 108 in 1831, 477 in 1861 and 925 in 1891. Many of these would have been very small doing only one part of the process, but the numbers are compelling nevertheless. Gomershall (2000,)[85] notes that during the 19th century there was a strong trend towards certain urban areas in the UK to develop large tanning areas. Most towns of any size retained a few tanneries but by the end of the century "some cities and most major towns in Great Britain were entirely without tanneries."[86]

McCulloch (1837) was already noting an element of concentration and talked of the number of tanners in the UK congregating near large towns, especially ports. Bermondsey and Enfield had been important centres for tanning. Already in the early 19th century Worcester and Yeovil had been noted for gloves, and since the early eighteenth

[83] Rimmer 1960, p.2.
[84] McCulloch 1837, p. 118
[85] Gomershall 2000, p.3
[86] Gomershall, 2000 quoting from Kelly's Directory of the Leather Trades 1896

century Northampton, Kettering, Wellington and Stafford had supplied London shopkeepers with footwear and supplied small quantities to the West Indies and North America.[87] The high cost of using the port of London and difficulties with water supply in a fast growing city began to make the bigger tanneries look north to the Mersey and Humberside where these were more easily managed.[88] As the demand for leather grew the need to import hides rose. Rent costs, the costs of transporting oak bark, were all cited as reasons for a trend to move away from London from 1870 on. Liverpool steadily became the centre for the UK's specialist heavy leather tanning, although the Booth Group, who worked mostly with lighter leathers from sheep and goat, were not involved.

As factories grew in size so labour issues began to surface in the UK. The Leather Trades Review of November 1896[89] reports on Messrs. William Paul, and oak bark tannery in Leeds. Mr. Paul had visited the USA and seen much higher levels of productivity. In order to compete with imports from the USA undercutting his market he changed the booking system for the work force and was faced with a walk out. After discussion eighty men returned to work but we are told a considerable number did not and were dismissed. It would be "utterly impossible to carry on his extensive development if he should allow the men to dictate in and on what conditions they would work for him" Mr Paul was quoted as saying.[90] This was clearly an exceptionally large plant for the time.

In the rest of Europe tanneries were not so small and Clapham (1930)[91] blamed fiscal regulations for this. He compared the UK to France and Prussia where tanners worked on a much larger scale,

[87] Rimmer 1960, p.120.
[88] Church, 1971, p551
[89] The Leather Trades Circular and Review, Nov 10, 1896 page 200
[90] Idem
[91] Clapham 1930 p. 324

although Rimmer (1960)[92] considers this not to be a complete answer to the lack of organisational growth of the UK industry in the 18th century. His view was that little export was done and using hides and skins produced by butchering livestock in towns and villages most leather workers simply catered for the needs of their immediate neighbourhood. "So long as the market remained limited, there was no pressure for integration in view of the range of products produced at each stage. No one currier wanted the whole of a tanner's output, any more than a single shoemaker or harness-maker wanted the whole of a currier's output. Variety of product and extent of the market limited the scale of operations more effectively than excise regulations."

The development of the early twentieth century leather industry were characterised by the continued, indeed accelerated, development of the use of chrome tanning and other new technologies, the introduction of better synthetic and textile matters to substitute for leathers coinciding with reductions in certain end uses as motorised transport became more important, and labour issues associated with the production system in towns like Gloversville.

Most of these issues were fully played out in the US Leather Company and with Booths. A New York Times item from April 13, 1924 headlined:

"What is wrong with the leather industry? What reason is there to believe that there will be a recovery in the next few years? What scientific developments warrant faith in the future of leather? What about the substitutes, rubber for sole leather, fabrics for upper leather and for upholstery leather the installing of motor trucks and tractors for

[92] Rimmer 1960, p.121

horse drawn vehicles and farm implements which require leather harness; rubber and textiles for leather belts?"[93]

This same point is very well made by Rotenstein (2001)[94] in his discussion of the Pittsburgh tanners, who had stayed out of the United States Leather Company. "Pennsylvania's once bountiful bark lands were disappearing and new technologies were emerging that would make the world much less dependent upon leather than before. As the automobile replaced the horse and gears replaced leather belts, Pittsburgh's tanners began to disappear. Bankruptcy, shattered markets, dried up supply sources, and better prospects in industries less stigmatized than the noisome leather and meat by-products industries all contributed to the demise of Pittsburgh's leather industry." Reading this both the Booths and the United States Leather Company were actually doing a good job to adjust to new technologies and societal changes. Many of their competitors chose to close, and this seemed to be most true at the moment of generational change. Parents would warn children of the low margins and uncertain future and children would themselves see long hours in difficult working conditions at a time where other business areas offered higher security and profits.

As the industry exited from New York we lose any indication that the bovine tanners were talking to the skin tanners. Except for lunching together in the Swamp they had little reason to communicate. Chromium and other light tannages such as Dongola did not require access to forests but they did need small skins. Gloversville in upstate New York did hang on as it had a large local glove trade to supply and many glove factories were commercially linked to tanneries under the same ownership. Yet most of the small skin business required imported skins and there was a movement to the coast first - to

[93] What is wrong with the leather industry ?" New York Times, April 13, 1924
[94] Rotenstein, 2001, p.11

Philadelphia, Newark and Boston. Goatskins from Brazil and other parts of the world were imported into Philadelphia and the tanneries there steadily perfected chrome tanning and grew to enormous sizes.

The discovery of how to produce extract meant that oak tanners could mix in hemlock and vice versa if they wished. They started to do so and a new Union tannage became popular. Location was less important and they could look to advantages of building larger plants benefiting from scale and the use of steam. What they did need was large steady supplies of hides so moving close to the meat packing industry in Milwaukee and Chicago seemed logical and steadily this was what happened. There had not been a big skin industry so it was the vegetable hide producers who had the legacy issues to deal with. Overcapacity, geographical inertia, and plants and property in the wrong places all became issues for the traditional bovine vegetable tanners. As we will see the two networks appear to have diverged and largely lost contact, only meeting each other in competition for the shoe upper market.

5.3 The United States Leather Company

In both the USA and the UK the Booths were embedded in the leather industry, and indeed were for most of the 19th century the major link between the industries in the two countries. The Booth area of activity had been developed essentially around small skins especially semi-processed sheep.

Yet the biggest volume raw material source used by the leather industry is actually bovine and this was used for saddlery and all aspects of what might be called horse furniture such as reins and bridles plus seats for carriages, as well as sole leather and some footwear uppers. There was overlap between the smaller and larger skins in the areas of clothing and in shoe uppers. With full vegetable

tanning (hemlock and oak mainly) the bovine leathers produced tended to be thick and hard for both uses, albeit very durable.

At the start of the 1890s sole leather tanners in the USA were losing money and could not see a way to change this without a change in industry structure. Attempts were made to improve things by introducing reductions in input for limited periods but this did not help.

In 1893 sixty American leather businesses involved primarily in sole leather production combined to form a consolidated business. Together they owned one hundred and ten tanneries and with it over 70% of the US output tanned with hemlock, about half of those who used a mixed tannage, and a third of the oak tanned leather output. The corporation also acquired four hundred thousand acres of bark land and the bark rights of a hundred thousand more. Dewing (1911) indicates that this coming together came about after observation of similar and successful combinations in the oil and sugar industries. He also thought certain of the older tanners saw this as the best route to administer their business affairs in case of their death.

Dewing also considered that the best hemlock tanners joined the combination but the best of the others stayed out, having demanded and failed to get a bonus for joining.

One external view of this arrangement came from the Pittsburg tanner Callery, who had been renting additional premises as needed to access tanbark, his most expensive raw material:

"Nearly two decades after Callery's expansion into the Alleghenies and four decades after many upstate New York counties had been deforested by barkpeelers, in 1893 a cartel of mostly Catskill tanners incorporated the United States Leather Company. With 150 tanneries

and hundreds of thousands of acres of bark lands, U.S. Leather – through its Pennsylvania subsidiaries – moved across the Mason-Dixon Line into West Virginia (and other Southern Appalachian states) as Pennsylvania's forests disappeared. Once described in a leather industry trade journal as an "Eden for Tanners," Pennsylvania's hemlock and oak forests were suffering the same fate as those in the Catskills a generation earlier."[95]

At formation the US $128 million United States Leather Company had the largest capitalisation of any US industrial business. The Standard Oil Trust was valued at US $102 million and the American Sugar refining Company US $75 million with the US Rubber Company and American Tobacco much smaller. Watson estimated that the corporation represented 60% of the total sole leather tanned in the US at the time.[96] The key players at the founding were Proctor, Rice, Hoyt, Horton, Lapham, Ladew, Schultz, Lee, Costello, Healy, and Bullant.

In 1893 the tanners in the new group found they were getting little benefit from the reorganisation and had lost US$1.3 m dollars. Things were little better in 1894 but in 1895 they were able to pay part of the promised dividend to preference shareholders only, but at no time did they ever manage to earn enough to pay the 8% on the preferred stock set out in the formation agreement. The six percent paid in 1895 appears to be the largest pay out the company ever made. The company had a peculiar set up giving rights to the preference shareholders to accumulated but unpaid dividends and with rights to both dividends and assets in case of closure. The actual figures for the first decade in operation are below.[97]

[95] Rotenstein, 2001, p. 8
[96] Watson, 1950, p. 12.
[97] Dewing, 1911, p. 73

[1] The following table indicates the amount of dividends paid, the earnings, and the accumulated unpaid dividends from the beginning of the company. The dividends were cumulative from May, 1893, which accounts for the fractions.

Year	Earnings	On Pref. Earned %	On Pref. Paid %	Amount paid on Pref. stock.	Accumulated Div. on Pref. Unpaid.
May 1, '93 to Apr. 30, '94	—$1,340,494	—2			
May 1, '93 to Dec. 31, '94	+ 726,478	1.1	..		
1895	9,359,833	15	6	$3,726,938	
1896	— 2,017,037	—3	1	622,823	$21.33
1897	3,237,372	5	4¼	2,491,292	25.33
1898	1,821,921	3	4	2,950,409	28.33
1899	4,947,601	8	5	3,144,115	31.08
1900	2,281,511	3	6	3,736,938	33.08
1901	5,888,455	9½	6	3,736,938	35.08
1902	4,595,589	7	6	3,736,938	37.08
1903	1,086,095	1½	6	3,736,938	39.08
1904	3,645,267	6	6	3,736,938	41.08
Total to Jan. 1, 1905 (Time of reorganisation)	35,573,080			31,608,267	
1905	6,178,457	10	6	3,736,938	43.08
	41,751,537			*35,345,205*	

Total surplus from net earnings at time of reorganisation, Jan. 6, 1905, $3,964,813.

Figure 3 US Leather Earnings 1893-1905

Not all opinions of the business were as negative as Dewing came to be. Norcross (1901) writing earlier in 1901 said "the management is now at its best, the expenses are small, and the stockholders have every reason to be satisfied with the returns made for the investment." Certainly the period between 1893 and 1898 was one of general business depression, which was a big issue for all businesses, and was particularly felt by the US Leather Company. Steadily throughout this period the chrome tannage carried out on goat skins created a product for footwear uppers that was preferred over vegetable tanned calf. It was softer, lighter and much more water resistant. Textiles were also being used for some shoe uppers so much so that raw hides in stock in New York that would normally have been tanned in the US were being sold to Canada.

Watson noted that "the tendency in industry generally at that time to merge….acted to spur certain developments in backward and forward integration in tanning."[98]

One of the major shoe companies Endicott-Johnson decided to start tanning in 1896 since "the increase in the differential between the price of raw hides and finished leather was too heavy a burden for shoe manufacturers to carry".[99] Their tannery was eventually to become the largest in the USA. Unlike the packers who mostly bought existing tanneries Endicott-Johnson built their own. They built a new sole leather tannery in 1901 and subsequently began making various types of shoe upper leather. They manufactured for their own use and also sold surplus leather elsewhere.

In 1895 the trade in the US was particularly difficult and fear of first shortages of hides and then of excess caused big fluctuations in raw material prices in Europe. The United States Leather Co. ceased production for 60 days to stop the value of sole declining too far and planned a further 30 day shut down in 1896[100].

It will have been seen in the evolution of the Swamp that as the tanners moved their tanneries out of town and became merchants they also began to realise the value of their property and became in part at least developers in property. Some become full time property developers and indeed many of the famous Newport Cottages are linked to this strategic change. This was to become a characteristic of the trade for the next 150 years as tanners in the western world evacuated from unsuitable city centre sites and moved out of town or out of business. In some parts of Europe this hidden realisable asset ran in to trouble in the late 20th century when tougher environmental

[98] Watson 1950, p. 12
[99] Idem
[100] The Leather Trades Circular and Review Jan 14th 1896 page 421

standards checked the ground and found old tanneries to be contaminated with solvents, anthrax or other toxic materials. Nevertheless the continued acceleration of urbanisation often means that even relatively modern tanneries can soon become surrounded by housing and feel obliged to move.

The creation of the US Leather Company was followed in 1899 by the shoe upper leather tanners to form the American Hide and Leather Co which had 75% of the market in the US.

By the turn of the century the United States Leather Company had offices in Ferry Street, New York, Essex Street in Boston, and in Chicago and Cincinnati. Yet increasingly they worried about the value of their assets, in particular their lands. For the land revaluation they were initially interested in was the forest land from which they obtained their bark for tanning and in 1903 that was revalued at US $13m dollars more than the 1893 valuation. Attempts were made to restructure the business based on this revaluation but appeared to have failed mostly because of the tension between the preference and non-preference shareholders. The United States Leather Company had become a stock market “play”.

In the autumn of 1904 vice-president Healy of the United States Leather Company suggested that Armour & Company – a major hide supplier based in Chicago - should become involved. Mr. P.A. Valentine appears to have been a shareholder in both companies and key to the arrangement suggested by Healy. An agreement was signed and the business reorganised to give Armour managerial control and a 10% stake of the common stock of the business. The peculiar aspect to the agreement was that while the ordinary members of the company imagined that the idea would be that Armour would sell their hides to the business at a preferred rate no such agreement was actually made. Indeed the Armour staff were fully entitled to run the

United States Leather Company for the benefit of Armour & Company rather than anyone else. Notwithstanding the plan went ahead and in 1905 the business was re-incorporated as the Central Leather Company despite continued legal battles as to who owned what and at what valuation. In fact the Central Leather Company and the United States Leather Company were two separate entities with the latter owning 95% of the former. The idea was to merge the two but this was opposed legally by a shareholder group led by a Mr Colgate. The situation was not resolved until a settlement was agreed in late 1909. Meanwhile the business continued to produce and indeed to acquire some of their smaller competitors. The Armour managerial involvement ended in 1908 and Mr. J. Ogden Armour resigned in 1909 from the Board of Central Leather.

The legal battle that took place over these five years reflected minority shareholders concerned that they were being squeezed into giving up their claims on the surplus of the United States Leather Company, and the fact that there was concern that the new business had terms that allowed it to undertake activities far beyond just making leather. These included running lumber businesses and railroads which the company felt important to develop its hemlock forests. Associated with this was another group of shareholders who were purely speculators who bought their shares after the reorganisation had been made public and according to Dewing were only trying to make a short term profit by opposing the merger.

On the way through this process the United States Leather Company set up the Central Pennsylvania Lumber Company in 1908.

As this was going on Armour decided to enter tanning directly and in 1907 they started to make tanning contracts prior to acquiring companies directly. Another packer, Swift & Co, set up the Ashland Leather Co, took an interest in A.C.Lawrence Leather Company at the

time of its incorporation in 1897, and bought a number of tanneries between 1908 and 1911 to become a big producer of cattle hide leather as well as calf and sheep. Swift had earlier started to send hides out for contract tanning perhaps as early as 1892.

Morris and Co, another larger packing house began putting hides out for contract tanning in 1898 and then bought and ran the three tanneries of William P. Mosser and Co., Boston in 1908, selling them to Armour in 1918. By 1917 US Leather had only 31% of the sole leather business, while the "big four" packers – Armour, Swift, Morris, and Wilson had 22%. Looking at the cattle hide business as a whole including sole, harness, belting and strap leather the packers had just over 15% against the US Leather's 14%.

Dewing's opinion of the company is a distinctly pessimistic one, as is the analysis of Donham (1930). There are a number of points which Dewing makes that are further analysed by Donham. First is that in the manufacture of sole leather there are few benefits of scale, and that a large group bringing hides in from South America and tanning them in the USA gave no financial advantage over a small well equipped tanner making leather from local hides in his own hemlock forest. The idea that combining the 100 companies would create a monopoly and thus remove competition did not work out. In fact the price competition after the formation was no less than before.

This was particularly the case because of the long time involved in making this form of vegetable tannage, during which any fall in hide prices lagged behind the fall in the price of leather. The hemlock tannage made largely from Argentine hides involved considerable export to Europe where the leather had to compete with high quality European tanners from places such as Leeds and London in the UK and other tanners in France and Germany.

The long time involved for tanning was also a reason that tanners suffered what Dewing called a "chronic lack of working capital."[101] For domestic hides tanned with the vegetable process in the 19th century a year would pass from the purchase of the hides to the sale of the leather. For those using Argentine hides this time would be extended by at least another six months. This meant that the United States Leather Company suffered from the cost of large floating debts and these along with the steady low value of the share price damaged their credit.

Dewing is also very willing to put a lot of the blame on the skills of management.

"In surveying this protracted reorganisation (1903-1909) one must recognise that inadequate business foresight and managerial power lay at the bottom of the failure of the sole leather combination. It was this lack of entrepreneur ability rather the keenness of competition that prevented success. The management of a corporation worth over sixty millions in assets demands a business skill greater than that possessed by the old leather interests. They chose the wrong time to promote their enterprise, they burdened it with fictitious capitalization, and choked its life by excessive fixed charges."[102]

Nevertheless the company did manage to continue to pay dividends at the level of 7% until after the war. Indeed during the 1st World War the then named Central Leather Company did very well, albeit the unpredictability in global transportation made the management cautious in all statements. In 1918 the company announced a profit for the year which had dropped from US$8.5m in 1917 to just US$1.3m. This was blamed by Edward Hoyt, President at the time on the Price Fixing Committee of the Government. As an example the

[101] Dewing, 1911 pps. 76-77
[102] Dewing, 1911 p.103

Committee had raised the price of hides from 13 to 35% between May and July and then from August to October reduced them by 4-10% at the same timing fixing an arbitrary maximum selling price for leather[103].

Watson considers the 1910 to 1920 decade to have been very successful for the company, spurred on by war demand. "The war period brought huge sales and profits".[104]

Hoyt, a Yale graduate, died of pneumonia at the age of 47 in July 1920.

After the war matters began to deteriorate and in 1920 a loss of US$25m was recorded. 1920 was a year in which the leather market slumped. The New York Times[105] reported that the losses included a stock write down so great that the surplus built up during the war was entirely lost. The 1921 loss of US$9.2m came with a notice of a year-end upturn.

According to Watson (1950)[106] demand for cattle hide leather declined considerably after 1920 as a consequence of:

- technological change
- the appearance of substitutes
- new modes of living
- the great depression of the thirties

"As far as is known, this was the most important shrinkage in demand ever experienced in the industry."

[103] NYT Feb 25, 1919
[104] Watson, 1950 p. 28.
[105] NYT May 25, 1921
[106] Watson 1950, p 15

Many elements were involved including the reduction in the use of harness leathers as motorised transport became more prevalent, especially in farming. Rubber was replacing some leather soles in footwear and pyroxylin fabrics replaced leather upholstery and luggage. Rubber was also replacing leather in industrial belting. At the same time European tanners continued to grow and US exports to Europe in US Leather type products declined. Indeed European tanners began to penetrate the US market with finished product to a level that lead to duties being put on cattle hide leather imports in 1930.

The start of the twenties had not been good as a result of post war order cancellations in both the US and Europe that meant that the heavy leather sector in the US had built up large stocks of high priced finished leather so that the position was that for many large inventory or paper profits were made but were lost when the crash came in 1920. Judging from Donham e[107]ach year up to 1927 the sole leather industry sold six to seven per cent more leather than it processed as it reduced the accumulated stocks built up in 1918 and 1919.

US Leather entered 1920 with a surplus of US$30m and inventories of leather, timber, hides, bark, and extracts totalled US$75m. In addition to the write off already mentioned in 1920 by 1926 the surplus had declined to a deficit of US$19.6m.

Sadly the tanners do not appear to have learned from the past and they bid the price up as they anticipated a shortage and tried to corner more world hides.[108] They were successful in doubling their share in foreign hides but this just left them with excess over-valued inventory as the world entered the 1930s recession. US Leather was successful between 1927 and 1929 and rebuilt some of the value lost

[107] Donham, 1930 p. 475
[108] White, 1932 p. 469 – quoted in Watson (1950) p. 15

in the business, but they entered 1929 with inventories over US$30m. Large inventory losses occurred every year through to 1933.

The company reorganised again between 1925-1927 changing its capital structure and recognising it was a smaller business. No dividends had been paid since the first quarter of 1921.

After the re-organisation of 1907 some additional tanneries were bought, working in the same field. In the good years other acquisitions were made. In 1917 Griess Pfleger Tanning Company, a shoe upper tannery was bought (it was later sold at a loss of US $2m) and a few years later Hilliard and Merrill which cut soles was also purchased.

By 1925 the number of tanneries had been drastically reduced down to just 38, with 5 extract plants, lumber yards, mills, and a small railroad. The company had 5308 employees and a 30% market share of US sole leather.[109]

After a share capital adjustment in 1926 in 1927 the Central Leather Company and United States Leather Company were finally merged and the business renamed as the United States Leather Company

By then the companies United States Leather Co., Howes Brothers Co., and Proctor Ellison Co. had a 75% share of the sole leather market in the late 1930s. There was a post recession revival in general business in 1933 and in 1934 the trade got a boost from low priced hides resulting from a drought slaughter.

Meanwhile the activities of shoe companies in the leather industry continued with International Shoe Co. building a tannery near St. Louis in 1916 to make side leather (for shoe uppers). They made further movements with acquisition of three more tanneries – upper,

[109] Watson, 1950, p28

welting and sole leather – in 1921 and another sole leather tannery in 1924. In 1925 they built a sheepskin tannery, then a split tannery in 1926, and another upper leather plant in 1929. In 1930 they built a refrigerated hide warehouse to hold 150,000 hides.

Brown shoe bought Moench Tanning Co in 1926 which had two tanneries making sole leather and upper leather. All these developments by shoe companies and by meat packers into the leather industry, the general change towards lighter chrome tanned bovine leather, along with the relentless decline in the traditional markets of saddlery, sole leather, and upholstery meant that the company struggled for future growth. The United States Leather Co. had a spurt of protection as a strategic industry in World War II but not long after the New York Times[110] published a final message on Thursday, January 10, 1952:

DISSOLUTION VOTED FOR U. S. LEATHER; Stockholders Approve Action and Will Get Late in Month 1st Payment of $10 a Share
The United States Leather Company, which was an outgrowth of the original company organized in 1893, will be dissolved and liquidated. Stockholders overwhelmingly approved the action at a special meeting held here yesterday.

A complex and quite difficult business had come to an end after nearly 60 tumultuous years of steady decline.

5.4 Discussion of the United States Leather Company

The creation of the United States Leather Company was a deliberate outcome of interactions which consolidated some sixty leather

[110] NYT January 10, 1952, Thursday

companies representing around one hundred and ten tanneries. The ones to join were the most prosperous hemlock tanners while the oak and union tanners mostly stayed out, demanding more favourable treatment. The new business owned 400,000 acres of bark forest land and the bark rights to 100,000. Some of the difficulties the company encountered were no doubt exacerbated by the fact that they launched into four stagnant years in the USA economy. Yet they also had clear interpretations of the network within which they worked

Subjective Interpretation

There were clearly a number of issues running in the minds of the key decision makers who drove the creation of this large business. One minor, but not unimportant element was that some of the owners were reluctant to pass control to their sons, or their sons were not interested in the business. The major factor was without doubt the view taken about the price of hides and their negotiating position with the very large meat packers who supplied the hides.

The view taken of the business reads very much as one concerned only with the US market largely appearing to put aside both raw material imports and finished leather exports at the time. It also appears that they felt that small tanners not in the combination would not be effective competitors. Although the tanners were aware of the smaller plants and involved in imports and exports their network horizons as indentified from all the material written by and about them appear to be based on a narrow view of the companies in relative close geographic proximity to them. If all the companies held similar views of the network than it is not surprising that they came fairly readily to an agreement to unite into one organisation.

Relativity

The companies involved did know each other very well and had traded together over many decades. Most had headquarters in New York and

all had close association with the old New York trade. Many had family ties on top of this. In addition they were all making similar products and serving the same markets. They regularly interacted at trade events in the City. It is likely from this that they had a well defined structure in terms of knowing how they all were placed in their notional "networks" and that after decades of working alongside each other they had many shared beliefs.

One consequence of the interactions they undertook was that the number of external actors with which they individual interacted reduced as many matters were centralised.

Interdependence

Prior to the periods of thin or negative margins as a result of depression and the high price of hides the companies were competitors and did not work closely together except in areas such as shared bark lands or shared representation in certain geographic areas and overseas. Although competitors they would help each other ought and we have no evidence of aggressive competition taking place; this appears to be a balanced slow moving sector.

What is clear that that they thought that if they created clear interdependence by coming together they would be able to confront other parts of the network and defeat the issues which were preventing them from prospering. That is to say that while functioning independently they did not need resources from each other for their main stream activity, but they thought that the combined resource of scale would give them greater symmetry to fight the meat packers and the power to dominate smaller players in the market.

Actors may try to avoid depending on others but on the other hand if they face a problem they may have to accept new levels of interdependence in order to deal with the problem. This fits with the

first Network Paradox in that if the actor is dependent on a resource the relationship needed for access to that resource both create and empowerment and a constraint. The combined business should be able to confront the meat packers but in combining to do so the actor loses the flexibility of being an independent business.

An outcome her was that the companies became closely interdependent on each other and had reduced interdependence on external companies.

Jointness

By combining interdependencies and relativities jointness creates the opportunity for collective action. Relatedness is not well defined term and is often used loosely. All actors in a network are directly or indirectly connected with each other so can be said to have relationships with each other. This means that while some relationships will be obvious other might not be so apparent to the actors involved. Actors do, however, choose when to interact and have relations with each other and this is what happened in this case. The relatedness of the companies was made explicit by them uniting into one company.

The United States Leather Company foundation was an example of multilateral interaction as many companies came together, albeit there were a number of lead parties who mediated the events.

The Network Paradoxes are very apparent here in terms of outcomes in that as per the First Network Paradox once they had united into one business they had little opportunity to change the way they operated despite finding the competition more flexible and sprightly than had been anticipated and the meat packers to be able to side step their pressure. The Third Network Paradox became important once the company had settled and needed to move forward where we

see that the more it had tried to achieve control via tightening its internal links and reducing the number of external ones the less effective and innovative the network became.

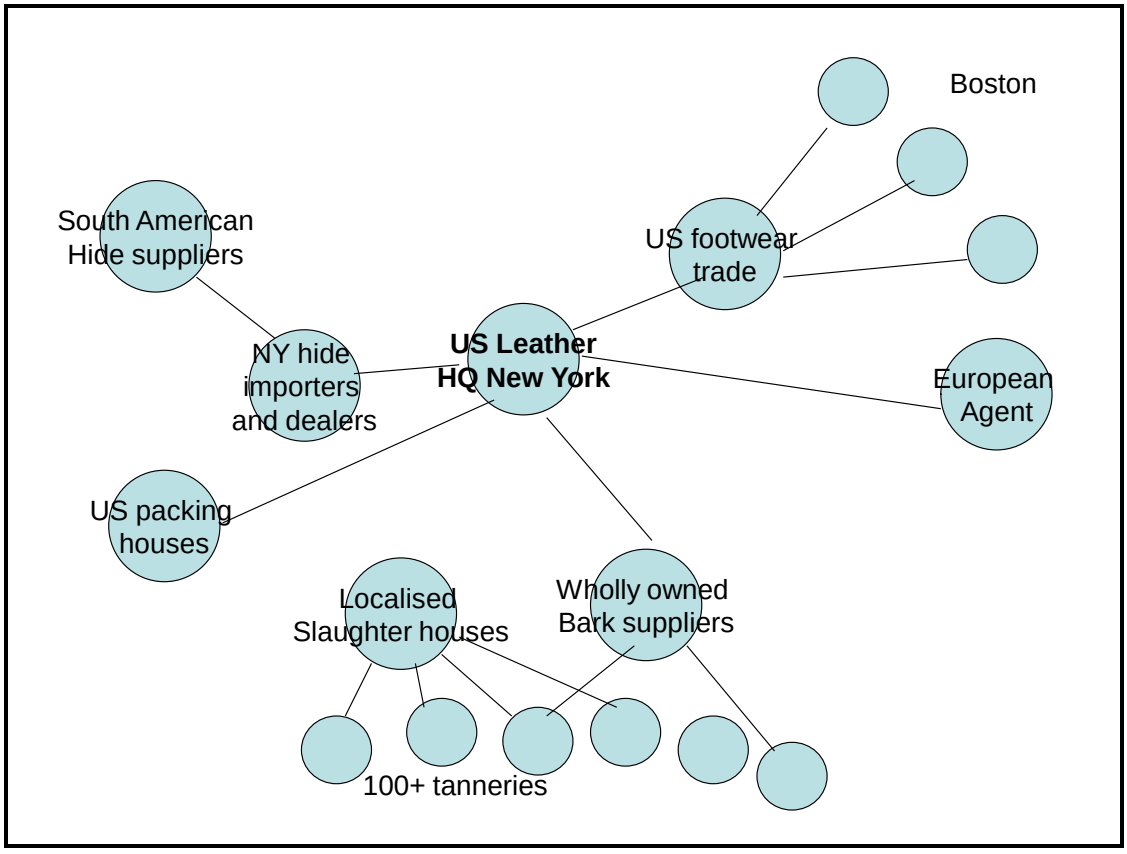


Figure 10: United States Leather Company post 1893

This can be seen in Figure 9 where the many tanneries in the business were required to manage hide purchases and sales via the central office e in New York.

5.5 Conclusions

The United States Leather Company gives us a simple example which is well documented of a large number of companies in the Leather Network coming together to tighten their links so closely as to form one company. With that most functions became centralised and external relationships were much reduced.

In doing this the company had mis-read the flexibility of the smaller competitors and were to discover that there were few benefits of scale in vegetable tanning. And according to Dewing[111] they also misunderstood the scale of their exports of hemlock leather where the international market was ferociously competitive. The meat packers who had been expected to reduce hide prices managed to work around the company. This was a typical network outcome where a company is unable to control interactions elsewhere in the network, however tightly it might bring together some sectors. The meat packers did not weaken their ties to the United States leather company, but they did move quickly to build relationships elsewhere. Through these relationships they were able to sell their hides to the more profitable and flexible oak bark tanners and eventually to start up their tanneries. The influence the United States Leather was able to have over the meat packers was minimal and indeed at one stage they actually asked for managerial help.

So instead of increasing the strength of their position in the market the purposeful networking undertaken by the US hemlock tanners had the outcome of reducing their competitive position and to limit their future ability to be innovative.

[111] Dewing, 1911, p. 76

6.0 Discussion and Comparative Analysis

6.1 Introduction

In this section the episodes are analysed in detail looking at randomness, combining resources, dyadic networking, networking to change position, network reaction and innovation.

The section covers the in depth analysis of the Booth Company, looking at the four episodes, plus the more anecdotal limited analysis of the United States Leather Company.

6.2 The evolution of the network

The Booths started a new business from scratch with two distinct elements of trading and shipping and made it a company of formidable size and reputation over the period of the sixty years examined. The management structure was sufficiently robust for Charles Booth to recuperate from illness in Switzerland for two years early in the history of the company and later for him to spend huge amounts of time on his social studies and pushing for a national old age pension.

The structure covered the UK, the USA and Brazil in particular but increasingly linkages took them to all continents. In both sides of the business they worked with leading edge technology although they never set out to be other than effective and up to date traders and ship-owners. They tested and withdrew from a number of smaller ventures in the earlier years and again they entered into additional areas in the first quarter of the 20th century.

A view of the innovations in leather technology would cast Booths as accidental pioneers. Nevertheless their impact was astounding. They were deeply involved in the two most important innovations of all time in leather manufacture: fatliquoring and chrome tanning. The third invention - the Dongola tannage - survived as quite an important leather making process for sixty years and may today be considered a "forgotten technology" (Parsons and Rose 2003) that is likely to be updated and reintroduced in the near future. One element of innovation has always been serendipity, the unexpected discovery of new things by chance. Yet serendipity and randomness might not always be considered discovery by luck. There is perhaps an element of system which might be considered in this approach. Being willing to maintain an openness to accept new external links and to encourage ideas from external actors would be examples of this approach (Håkansson et. al. 2009). In Internet times this might be considered outsourcing, or even crowd-sourcing and done largely on-line but 150 years ago a good trading house new that much of its value lay in the quality of its relationships. As has been stated Booths were known[112] to be keen to look amongst their connections for new business opportunities. Indeed in 1883 Charles Booth wrote about both Dongola and chrome tanning saying "working up of new business (which) is the life of any concern such as ours".[113] By maintaining so many intersectional linkages the Booth approach fits with this in terms of the potential for innovation discussed by Dosi (1988).

What today we would call macro and micro environmental analysis, placing the business in its context and trying to have some vision of what might happen in the future comes across quite clearly from the partners letters. From the comments they make in these it is possible to estimate how they viewed their network pictures at that time, and

[112] John, 1959, p. 79
[113] John, 1959, p. 73

to envisage that Charles and Alfred were looking at their business in terms of its locations in multiple complex networks.

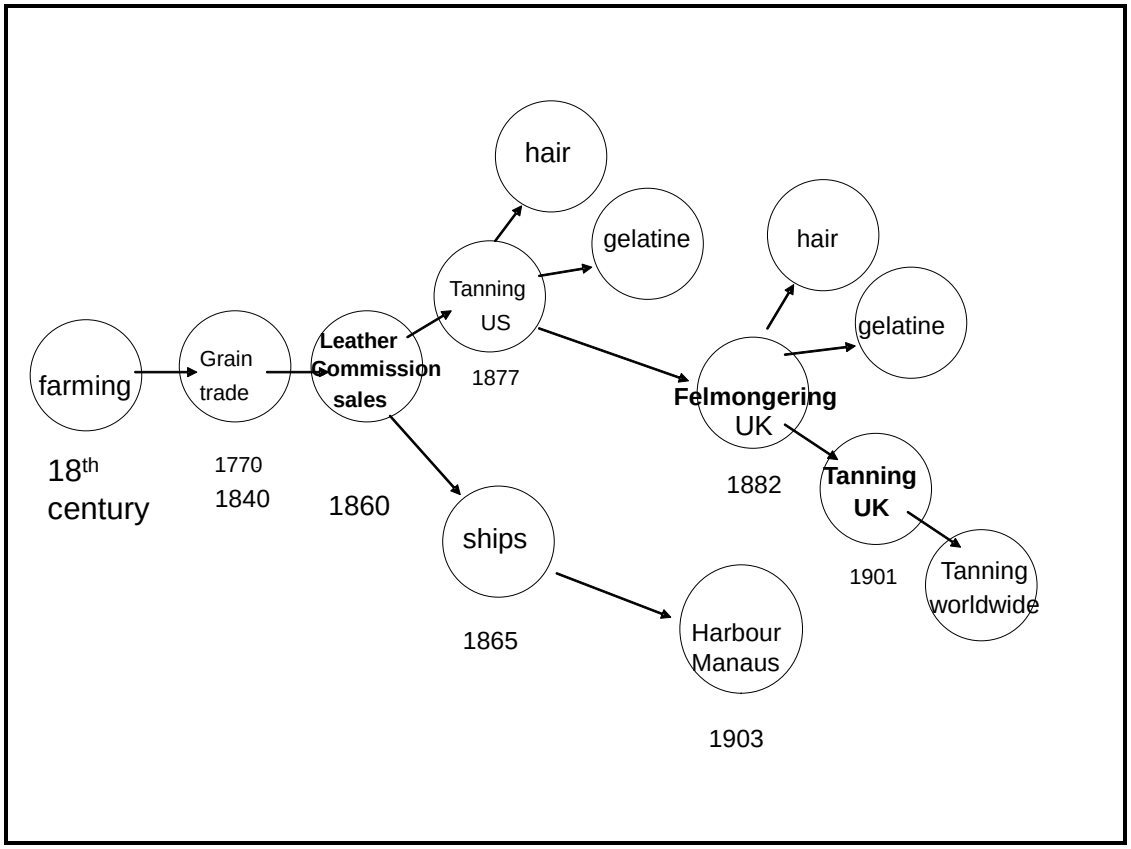


Figure 11: Evolution of the Booth Group

The company grew in complexity towards the end of the century and beyond. Figure 10 demonstrates in part at least how the company evolved through a variety of stages in terms of ownership while Figure 11 highlights some of the locations involved to show how wide the geographical spread of the business became in only a few decades of steady growth. Together we see a progression logically building as skills and competencies developed. We could also add further Latin American links in 1917 via the purchase of J.G.White which built upon the company's confidence with its Amazon trade and harbour management. This reversed a decision in 1902 when Charles and George declined an invitation to be more involved in Brazilian

infrastructure projects indicating that George's confidence to manage complexity had increased and he was willing to Create rather than Consolidate (Ford et.al., 2003; Ford, 2002).

There is clear activity throughout both sides of the business to ensure access to skills and resources. It can be seen that the business continued to expand contacts in different networks using personal relationships, work experience, and business relationships to develop new links on a regular basis. The interactions involved brought these links within different networks together in a unique and evolving configuration. There was little static about the Booth network, however it is viewed. Thus when Charles and Alfred examined their network and network position it would have been like no other leather merchant or any other shipping company. While all network pictures will be unique to the individuals drawing them Alfred Booth and Company would had a fascinating complexity of overlapping and integrating networks. It sits well with Håkansson and Olsen (2011) who suggest that interdependencies – along with motion and variety – are prerequisites of innovation.

Randomness as a Strategy

While we have some evidence that this complexity irked them, as it was quite difficult to manage, they never seriously attempted any simplification. From 1860 until 1920 the business only grew large and more complicated adding on activities in Brazil and in the UK. A characteristic is that they built links not just with new companies but also with significant individuals and kept a very complex mix of individuals and businesses loosely connected over long periods of time in an almost random way.

This "randomness" appeared to be a characteristic of the Booth business. It was allied to a willingness to take an interest in

individuals they considered creative or who might offer value in some way in the future. Amongst these were Charles Wade, Augustus Schultz, John Turney and James Kent.

Booths built many connections in the UK into tanning regions around Liverpool and Stockport, around Nottingham and Lincoln and in London. In the US they had strong industry links to Boston, Philadelphia and Gloversville as well as many international connections throughout the British Commonwealth and into Latin America. In their first decade in business much of their networking activity related to making new contacts and developing relationships throughout the world.

Whatever way they viewed their network and whatever limits they put on their network horizon their active connections meant that Booths were observing and interacting with a very large number of actors compared to the vast majority of others in the network. At a time when many individuals and companies were looking for new inventions making it known that they were open to new ideas inevitably put them in a position where innovation would become part of their portfolio. This gave them the landscape of variety, motion and interdependency discussed by Håkansson and Olsen (2011). It was distinctly different from what we see with the United States Leather Company whose interactions lead it to reduce variety and opportunities to find innovations at the cross roads with other networks (Dosi, 1988; Lundgren, 1995; Håkansson and Waluszewski; 2002).

This needs to be seen in terms of not just giving Booths the potential to oversee new technical innovations but also to create new industry linkages for trade such as kangaroo from Australia to Gloversville, kid skins from Brazil to Philadelphia, sheep skins from France to Gloversville and leather from Gloversville into the footwear industry.

As each evolution of their part of the leather industry surfaced Booths appeared able to react via their wide-ranging contacts and relationships. The Booths were dynamic in this and were content to see the networks as structures that were continuously organising and re-organising (Håkansson et.al. 2009)

Networking to combine different resources

We know from earlier studies such as Lundgren (1995) that technologies can take decades before being successfully commercialised and that often success comes through the novel combining of a number of technologies, of which only one element might be completely new. Meeting at new interfaces combines knowledge to meet the challenges identified by the relationships in the networks the business has developed. (Dosi, 1988) All these aspects can be found with the Booths involvement in leather manufacturing technology.

Even with knowledge of the need for a faster way of making leather and of changing consumer needs finding a commercially viable chrome leather took 60 years and getting the process near to what we can call stable took an additional ten. A simple social interaction with Schultz Kuttner brought together knowledge from the textile dyestuff industry to the leather industry.

The role of previous knowledge being edged forward in fits and starts with no clearly defined beginning and end (Håkansson and Waluszewski, 2002) is quite apparent in the development of the chromium story. Booths perhaps considered the chrome processing over when the Schultz patents were issued but not immediately exploitable, yet five years later they started to test merchandising one of the first versions being produced by others, and a decade later they were the global leader in its commercialisation. So not only was the

process hard to define in terms of time it was loaded with periods of inactivity and others of intense action. (Ford, et. al. 2009, p 91). This also demonstrates that Booths continued to network with multiple partners, adjusting their position in the networks of which they were part in order to always be aware as far as possible of new developments they could help to exploit.

Waluszewski (2004) demonstrates that resources and network outcomes have different values for different actors and often innovation finds its success in unexpected uses. With Dongola it is likely that Kent on his own would have failed with this product as although usable for glove leather it was far from ideal. Equally his idea had been to make glove leather from a Brazilian hair sheep or a domestic deer but the process initially worked much better on goat and kangaroo. Håkansson and Waluszewski (2002) explain how path dependency would be likely to stop Kent going beyond his existing market boundaries and how this limits the potential for discovering where the real market might exist. Creating the crossroads between established paths, as Booths were able to, made for new supply and demand interfaces (Håkansson and Olsen, 2011) which allowed for rapid expansion in unexpected directions for Kent.

Embedding ideas in a commercial setting is the moment when the majority of inventions fail. (Wagrel and Waluszewski, 2008) While James Kent was trying to make better gloving leather that would be cheaper than that being imported from France, Schultz was working in the very narrow niche of corset leathers. Yet the pent up demand that was growing, and of which Booths were aware, was for thinner, softer, better performing leathers for footwear uppers that could be made more quickly than the traditional methods. Both the Dongola and the chromium leathers actually found their role in meeting this demand for shoe upper leather as their key profitable outlet. For the Dongola it was the Booths who created the direct contact between the

new product and the trade and created the huge boom for the product.

We also see with Booths' relationship with technology an understanding of their recognition that their successful role would be more as a facilitator than an inventor. As different actors interact their tangible and intangible resources are likely to be adapted to mutual advantage. "The systematic confrontation of resources also underlies the development of new joint resource combinations in the process of innovation" (Ford, et.al. 2009). In this way they were a mix of a systems integrator and instigator. They brought connections, knowledge and finance to situations in a way likely to stimulate creative evolution of ideas. They were deliberately networking with multiple partners to find the right raw material that best suited each process and the right spots in the market to suit the articles characteristics.

Dosi (1988) outlines the importance of an "industrial web" which he argues is needed to diffuse new ideas into the market place and this was one major resource the Booths offered. They were able to identify the best markets for new leathers and had the network links to provide access and outlets. They were also excellent at sourcing alternate raw materials – kangaroo, deer, and kidskins – from any part of the world. For this they had their connections in the major ports and trading houses in Liverpool, New York and London.

Despite the importance of Dongola, fatliquoring and chrome tanning the Booths are rarely mentioned in texts discussing the history and technological development of leather. While they facilitated and funded much of the research and were the global force behind commercialising the new leather, including helping people like Wade start to making chrome leather in Europe, they never tried to own the

technology or to claim any responsibility for it. They did, however, prosper greatly from it over many years and decades.

Dyadic networking

One element that is used to identify the evolution of networks and the outcomes of interaction is when companies make adaptations in order to allow both partners to progress. Booths asked their UK suppliers to do this in the middle 1860s after they had observed how the financing of the business was working out.[114] Trade financing skill was one of the most important resources the Booths brought to the business via their early training and family connections and their judgement was likely to be correct. In these situations when companies are interacting outcomes they have been examined by way of the Three Aspects and 6Cs (Ford et.al., 2003; Ford, 2002).

Confront or Conform,
Consolidate or Create,
Coerce or Concede

In this instance Booths were in reality coercing their suppliers into agreeing the new changes which involved delayed payment and agreement to a 5% commission. While "coerce" or "concede" implies a battle the Booth approach was clearly argued and they succeeded with all their suppliers. Without question their perceived status moved from one of weakness to strength quickly as they grew (Corsaro et. al. 2011, p. 923). They had built up just enough credibility and jointness with their suppliers to have the trust needed for them to accept the request for new terms (Ford and Mouzas, 2008). The outcome did lead to better sales and profits and their relationships with suppliers were to last many years. That with Turneys of Nottingham remained

[114] John, 1959, p. 36.

close for nearly 130 years until the tannery in Nottingham was finally shut for redevelopment into housing.

When Kent and Booth collapsed with huge debts the Booth approach might be expected to avoid conforming or conceding but rather to search for an alternate. They indicated that they considered James Kent a clever technician with a good potential to develop new processes and that they thought the factory well run could be viable, so instead of writing off their losses they paid everyone off and bought in to the plant. This was a networking approach of confrontation and in confronting the relationship in the way in which they did Booths had to accept that this changed their network position and the roles within it. It is clear that Booths saw Kent as a resource (Harrison and Håkansson, 2006), which would be useful more tightly involved in their network, and one which would be a loss if they accepted closure.

The Kent situation also exhibits the role that time plays. (Ford and Håkansson, 2006; Mouzas, 2009) Since the Booths had worked with the company for some time they had got to know him and it was that knowledge which encouraged them to support him when they might otherwise have been expected to take the first loss as the least loss and walk away. High levels of trust are an outcome of long term relationships (Ford and Mouzas, 2008).

Networking allows a company to consciously change its position

A lot of attention is paid to the fact that an unwary company can find its network position fatally damaged by a failure to watch how events are changing the nature of relationships in the network and hence the position of their own business in relation to others (Ford et al., 2003).

Alternatively by positively networking a company may be able to alter its position in the network. A new network position might be created by the development of a technology within the business and within a

few years this was to happen for Booths. Their investment in Kent had initially meant that they had consolidated their network by taking a tighter hold of manufacturing within it. This meant they would start to think more closely about how the products of Kent's tannery could relate to the needs of all the markets that Booths worked in rather than just the narrow range of Kent's local glove customers. This moved Booths further back in the value chain (Dose, 1988; Duruflé, G., et. al., 1988) and also allowed Kent to interact with an entirely new group of clients that he otherwise had no access to (Ford et.al. 2009)

There was no attempt to create a secret "skunk works" at any stage; the Booths approached this on the basis that if solutions could be found to identified market needs Booths and their associates would benefit. While we do not know the reasoning no correspondence has been found to date indicating any desire to "own" technology only the relentless interest to keep on developing new business areas. Paradox Three (Håkansson and Ford, 2002, p. 254) suggests that companies may try to manage their relationships and control the network that surrounds, but that the more successful they are the less effective and innovative the network will be. The Booth approach was to avoid control, unless forced (as with the purchase of Kent's tannery) and even with control to trust the individuals to be able to act independently.

One element worthy of consideration is that Booths had other business and personal interests which forced them into looking at their networks and network relationships in a different way from other tanners. When the Schultz patents were ready Booths were still busy with the Dongola tannage which was doing exceptionally well. It required a great deal of work in the search for raw materials and in servicing the growing market in footwear leather, which was new to Gloversville tanners but well known to Booths via their activities in New York and Boston. They had bought the neighbouring tannery to

expand production and used their own shipping line to introduce a direct shipping route from Para to New York primarily to import goat and hair sheep skins.

At about the same time in the UK they had invested to set up a new plant in Nuneaton to make a product from roans (another type of part processed sheepskin) more suited to the US market. Charles had also personally been making trips, such as one to Bordeaux in 1881, to look for better quality raw material.

With shipping, trading, tanning and a global perspective the Booths at that time were themselves a unique organisation. They worked on many interfaces and within a number of networks that were very different to other leather traders or, for example, an individual tannery in Nottingham or Gloversville. With their network position and naturally wider network horizon were in a better position to assess the potential and requirements of a new development in leather than most other actors in the network. In this regard, looking at the Three Aspects (Ford, 2003), in the main the Booths tried to create rather than consolidate when making choices about their network position.

Networking also changes a company's position

So while we lack, based on the papers available to date, any clear definition of why Booths did not want to control the technology tightly we do know they were exceptionally busy in many other areas within and without the leather industry. They might have been just "conveniently" diverted by other matters. At that time they saw themselves as business people first and tanners second or third. Their letters always describe a love of the industry, not a romance with the product. So their orientation and their network assessment was much more about the markets – for raw and finished leather – than the finer details of the product itself. When the market demanded a new

product, or as with the roans their product was not suited for the market, then they made changes.

Paradox Two (Håkansson & Ford, 2002, p. 252) states that while a company's relationships are the outcome of its own actions and decisions; the company itself is equally the outcome of its relationship and what has happened within these relationships. Thus we see the nature of trade and manufacture changing throughout the period as better communications, new technologies and global expansion changed the world of business. For the United States Leather Company the value of ownership of bark forests, and the location of tanneries within them soon became outdated when it became possible to extract the tannin from bark at source and the slaughter of cattle took the hides to the mid-west as a result of the railways and refrigeration. In both networks new relationships were established and the networks changed steadily, but the Booth approach made it easier for them to adapt whereas the United states Leather Company were entrapped in the negative side of Paradox 6 (Håkansson and Ford 2002).

While Booths' intensive networking and bringing together of different actors did change their position in the network it is not clear that they fully realised until later that they were moving from being traders to manufacturers. Within a few years they would not be seen as suppliers of raw material but as tanners and others in New York and Boston entered the market to fill the spot of raw material suppliers to the industry. Certainly by 1920 with tanneries in the UK and the USA they were to be one of the biggest, if not the biggest, tanning organisations in the world. Growth in the US slowed but they continued to acquire and build in the UK and added plants in Africa and New Zealand. The one small move to support James Kent at a moment of crisis was to steadily transform their role in the global leather network.

Network reaction

What we do not know is why the traditional vegetable tanners did not react when Booths began selling goatskin and kangaroo Dongola leather into the footwear industry. This was after all a vegetable process (with some adaptations) which they could have used on their own raw material. Indeed in the 1930s we have many records of Dongola still being used on bovine material long after goat and kid tannages had moved on to chromium. Yet at the time we have no evidence of any form of retaliation or moves to defend their market share. For ten years Booths worked extremely hard to strengthen their links into the footwear sector of the US leather network. Did the vegetable tanning sector not notice, or was their response to push more into sole leather, saddlery and upholstery? In this dissertation we have not discovered the answer to this, other than knowing that Booths were successful in penetrating the market to the extent that their Philadelphia tannery Surpass Leather grew to be one of the largest tanneries in the world and certainly the largest ever kidskin plant.

We do of course know that the US vegetable tanners were preoccupied with the supply situation, including their fear of the growing power of the meat packers. In 1893 they grouped together (a major consolidation in terms of the Second Aspect of Networking) in the hope that their combined buying power would make them more equal to the meat companies and better able to negotiate prices. For the next fifteen years nearly all the written materials about this new company relates to internal problems in the organisation of the business and the revaluation of assets, in particular forests, in order to pay dividends.

As a consequence the US Leather Company management did feel they were embracing change and that they were making a bold move to

advance their industry, yet their network pictures were narrowed towards the domestic scene and their traditional markets. For this research the equivalent of partners letters for the United States Leather Company are lacking so any network pictures tend to be based on transactions rather than the expressed views of senior individuals. They did use Argentine hides and export a little to Europe, so were not without international contacts and expert commercial knowledge. Yet when looking at what correspondence and contemporary papers a restriction on the boundaries, a heavy emphasis on power, and a focus on besting the abattoirs to reduce hide prices dominated their network pictures (Henneberg, 2006, p.416).

So while the move from trader to tanner was for Booths a gradual process over 25 years or more, and they never actually gave up trading, this was quite different from the abrupt Confrontation of the network position undertaken by the members of the US Leather Company in 1893. In just a few months the vegetable tanners interrupted hundreds of long standing network relationships and reduced them to just a few tightly centralised ones.

At no stage in the Booth business were relationships interrupted on this scale. Where ties weakened with Booths the relationship often remained for years or decades in a non transactional form, with the parties continuing to meet and correspondence. They retained a high level of social capital (Easton, 2004) throughout the network which they could call on as needs arose.

On the shipping side of Booths relationships were developed, resources expanded and the business grew in the same way as did leather. The initial trip to the Amazon allowed them to come away with the mail contract – after a lot of negotiation to meet the needs of both sides - and an associated knowledge of how to deal in that country

and obtain access to other materials worthy of export. When they much later in 1879 purchased two fast sailing craft[115], without steam power, to take bulk cargo on direct routes, they indicated that they had perfectly understood the import and export requirements from that zone and how best to harness technology to service them. The negotiation with Singlehursts and the Red Cross line show that they were willing to confront competition but also to work with them in the finding of mutually workable solutions. The networking and discussions with all stakeholders in that period was clearly intense.

It might be said that the Booths managed this by being better at looking at the bigger picture than their competitors – that their network horizons were wider and they better understood global development and the relative values of steam and sail. Charles in 1869 wrote "as we approach the Singlehurst opposition it seems more and more likely that it will be only competition which in some senses will prove to be a combination"[116]. In setting up in Brazil the Booths had connected with older trading houses, especially Gunston, Wilson and Company the most significant. GWC withdrew some of its sailing ships from the route and invested £10000 to help Booths commission two more steamers. Some of their contemporaries were quoted in 1869 as seeing the Singlehurst move as "the end of their venture"[117] whereas the actual outcome was to be that early in the 1900s Booths acquired the entire Singlehurst Company. It is curious how often this aspect of a long relationship ending in 100% ownership features in the company business – Kent, Wade, Surpass, Turneys being typical.

Booths also signed an agreement to manage the port of Manáos until 1971 which lead to them transforming the harbour with a pontoon in 1903.

[115] John, 1959 p.65
[116] idem
[117] John, 1959 p. 59

So in the sixty year period from 1860 to 1920 it is clear that Booth and Company took an interest in acquiring access to resources to allow them to expand and develop the business. A large part of this took place via building on relationships and acquiring new ones. They were then able to combine these resources in new ways – to sell Dongola, designed as a glove tannage, to the footwear industry for example – to create a unique configuration in the world's leather industry. They "networked" aggressively to build new relationships and to adjust the nature of existing relationships so that they and those close to them could work together for mutual gain. This develops the thinking laid out in Araujo and Easton (2012) where history and existing structures can constrain activities now and in the future unless the company is active.

We have seen that companies build on their previous interactions and these create both opportunities for future moves but also obstacles. Yet while the network position decides what a company is capable of doing certain positions clearly give it more flexibility than others. It is a fair conclusion that the Booth Company of 1860-1920 had far more options than did the United States Leather Company of 1893-1920. And during that period Booths steadily developed the shipping into a sizeable business, strengthened the Brazilian connection so that they could take on other elements such as a complex company such as J.G.White, and moved from traders to tanners. In these moves their network positions generally aided them rather than impeded them. So this dissertation shows that companies can build on their history yet their actual next steps depend very much on the relationships they have and how accessible the resources and technologies they require are within those relationships. So there is a somewhat bigger picture to consider which a network approach can help with.

The dissertation shows how over time a business can gain access to new resources and quite separately relationships which allowed them

to exploit those resources. In looking back in this way at events over a number of decades the adaptations that took place become apparent. Changes in interdependence, relativity and jointness are identifiable and many relationships started in the 1860s, 1870s and 1880s lasted well over 50 years. In those instances where we have good information it appears that the company choose its partners with care. The developments with James Kent and Charles Wade were typical.

These periods to some might look ridiculously long, and of course the Booths developed good, close relationships with both these men in much shorter periods. Yet the truly meaningful adjustments can only be seen over the longer period. Booths worked with James Kent for over ten years until he unexpectedly died and then carried on the Kent business until the 1940s. With Wade a relationship started in the early 1880s stayed strong until the closure of the Wade business in 1979.

This underlines the importance of looking at networks over long periods of time. We have seen that it can take many decades for some technological developments to work their way into a successful product, while business goes on in the meantime. Dongola ran as a key element for Booths for 15-20 years and chromium tanning impacted the business for nearer seventy five years. At a dinner in New York held in his honour and organised by Paul Cravath, the famous US corporate lawyer and anglophile, and all his banking friends George Booth found himself sitting next to Rockefeller who had just bought the bank in America which Booths used. George Booth rose to his feet and said “Is there anybody else in the room who can say that he has been operating the same bank account with the same bank under the same name for 59 years.” (Crow, 1965. p163) Booth was proud of these long term relationships and saw great value in them.

As the company gathered more resources it had the capability to expand on a global basis. While figure 10 attempted to show a limited picture of the business area development over time Figure 11 shows some of the extensive geographical evolution.

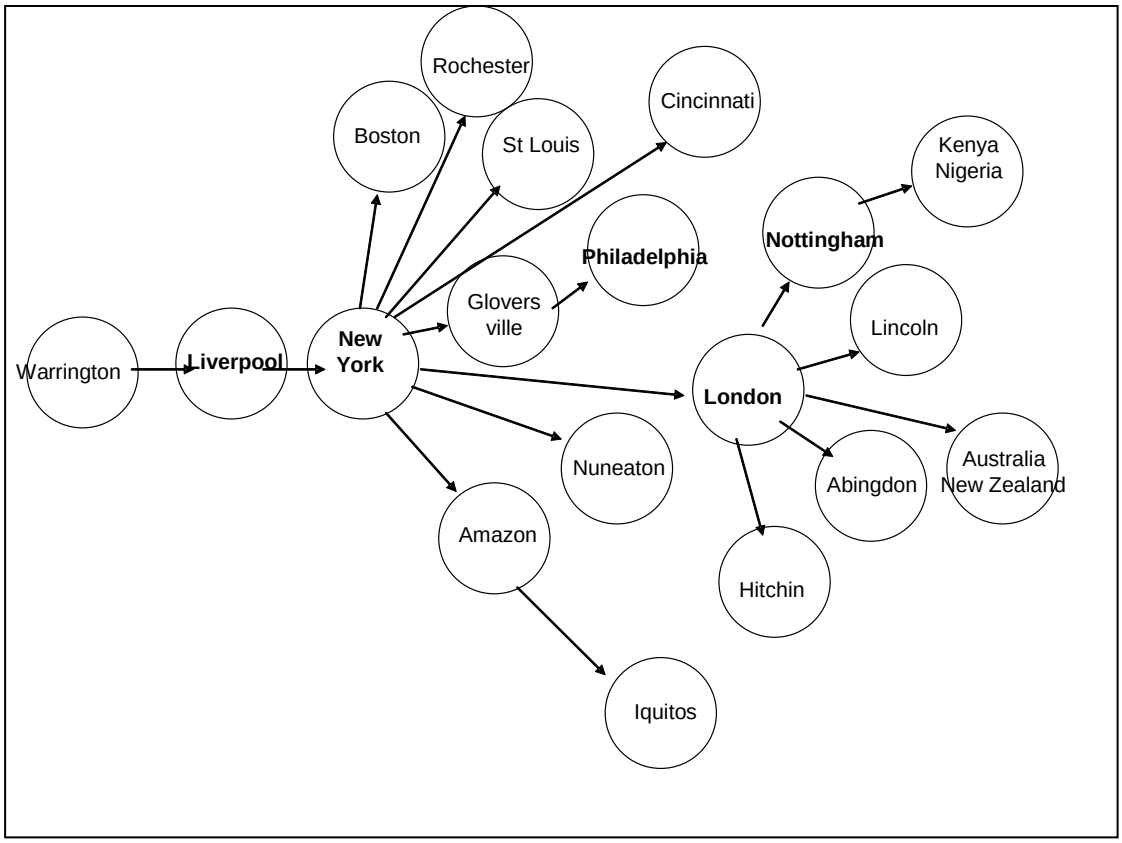


Figure 12: Location development

The "Booth men" were part of these long term relationships. Booth men rarely moved on and if they did invariably remained friends. Managers were given their head and allowed to show their initiative. The letters and the constant visits appear to have created quite a uniform approach to issues, without reducing the creativity. It was expected that new ideas would be brought to the attention of the partners and that problems would be discussed along with potential solutions, however radical.

Any network pictures which they drew physically or mentally apparently started with the big picture, a global one with many loose relationships. From what we can see this helped them take strategic

decisions. They started with a small trade between the UK and New York and soon in both countries they had become significantly embedded in the leather industries in both locations. Then they went further into the by-products side with glue and gelatine. Then they began to get involved in new technology, mostly by luck – although they took a certain risk with Kent.

The idea had always been that the shipping line would service the leather side but their development showed that this only partly worked. They were the first to exploit the Brazilian goat in the USA but the export of rubber from Brazil was a much bigger and more profitable business. So also was shipping mail, gunpowder, nuts, iron and passengers. So the two businesses never fully integrated but did offer a means of finding separate very senior jobs for their children which was perhaps a consideration.

The general move from trading to tanning looks, in hindsight, to have been a clever move. We do have comments from George Booth that they were aware that from the USA to Australia more hide suppliers and meat packers were dealing directly with major tanners rather than via traders and they would consider that as both a direct customer and a trader they could take a privileged position in such dealings.

On the other hand it is perhaps worthy of speculation as to whether for a company with a network position such as Booths with links to so many industry sectors and geographical regions the global trends would not naturally present themselves to Booths via the actions and ongoing interactions of the many actors in the network. Might it be that if you have a large and broad network position and do not try and control it with over tight dyadic interactions there is a better chance for a business to both recognise and be moved along by events elsewhere?

Long term and less seen was the way this moving from trader to tanner led gradually to a change in the culture of the business.

As the world entered the 20th century an external observer with some knowledge examining the leather industry would have recognised two large groups involved in the leather industry. Curiously for those sitting on the ground within the industry the importance of both of these two groups was not always apparent in the small world of leather. The United States Leather Company was much talked about in the US but much less overseas, and while the Booth Group was recognised as important in each of the US and England their international scale was never picked up in the trade magazines and journals of the time. Perhaps was because the interactions which the Booths considered to be important lay not in the trade bodies of the leather industry but elsewhere in the city, the shipping business and trading circles.

Reading the available formal and informal documents of the period neither company refers to the other. Both dealt in different raw materials from different origins. The United States Leather Company worked on US, Canadian and Argentine cattle hides and The Booth Group on small skins from sheep, goat and kangaroo from Europe, Brazil and Australasia. The United States Leather Company made leather mostly for footwear soles, with some leathers also being used industrial belting, leather goods and equine uses while the Booth Group had more of a focus on glove leathers, clothing and footwear uppers. Both were involved in exporting leather to the European footwear industry.

The period from 1860 to 1920 was one of significant technical and industrial change. Rapid urbanisation allowed the industry first to use steam power to permit multi-story “mills” or factories to take

advantage of increasing invention in terms of machinery for all stages of the leather chain. Splitting machines, fleshing machines and drums (as opposed to the traditional pits) for tanning and sewing machines for those using the leather for a variety of end-uses were amongst a plethora of new ideas developed in the 19th century.

The two companies arrived at the end of the 19th century via quite different routes and their structure, industry linkages, capabilities and relationships were remarkably diverse. The fortunes of both were to be entirely different also in the 20th century. From the beginning any Booth network picture spanned the world, while that of the members of US Leather Company even before formation were much more focused only on the east coast of the US. They had occasional linkages to Latin America for some raw material and to Europe, especially Germany, but these were limited. So while the Booths kept expanding their network building on relationships and resources the US Leather Company and its members grew ever more insular. Both companies appear to be guided by their prior interactions and relationships.

One very distinct area is that of network control. Early and subsequent studies of networks demonstrate that the actors' views on how much they can "control", "create" or "manage" a network are important. Ford (2003) makes it clear that it is better to talk about managing within networks than actually managing them as the network complexity makes attempts at control almost certain to fail. The foundation of the United States Leather Company gives every impression of a business that tried to dominate and control its network. It felt that its size gave it power and authority for control. The US Leather Company executives assumed an interdependence with the meat packers which was not in fact present. The meat packers they felt they could dominate

- Did not like the thought of being controlled by one tanning group
- Had enough alternate network relationships to sell their hides
- Had appropriate network connections and resources within the network to go into tanning themselves

As a consequence the meat packers chose to strengthen the other relationships they had and lessen those with the US Leather Company. At the end of the first ten years of its existence the relationships and network position of the US Leather Company were very different from that which had been anticipated when it was founded, and not for the better.

By comparison Booth's strategy in the early years relates closely to the issues raised by the third network paradox. There is little evidence that the Booths tried to tightly control their network in the early years. Both the establishment in New York and the first trip to Brazil had a significant element of experimentation about them and allowed for flexibility and innovation by others. That is not to say there were not thought out, or that no business plan had been written. John (1959) describes a process of analysis for each business in a clear search for a network position where competition was less likely to be intensive and retaliation from incumbents was unlikely.

Many linkages were made, both formal and informal. The Booths positioned themselves within both the shipping and leather networks in a way that gave them very many contacts, creating the likelihood that they would see many new situations and be faced with innovative options, as turned out to be the case.

Booths found their long term network outcomes very different from their anticipations but appear comfortable to live with that. The Booths recognized their own skills and utilized heavily the resources, creativity and capabilities of others. They do give every indication of

managing “within networks”. Many linkages were made, both formal and informal. The Booths positioned themselves within both the shipping and leather networks in a way that gave them very many contacts, creating the likelihood that they would see many new situations and be faced with innovative options, as turned out to be the case.

The UK material suppliers they chose were mostly young businesses which were keen to export and willing to adapt in order to enter new markets. The overriding impression given from the correspondence is one of avoiding rigidity, and maintaining a flexible approach, able to adjust to the conditions as they were uncovered. They moved to Brazil and the USA with specific linkage spots in the network to be filled, but only approximate ideas about with whom they would become attached.

One element of managing within networks is the gathering and sharing of ideas within the business. The Booth business was always involved in great distances and during the period we have examined partners’ letters moving initially between the two founder brothers but later shared with the top key executives were the chosen method to make explicit and clear different members views of the relationships, actors and interdependencies at work. We never saw a formal audit as might be recommended today but these judgments were clearly as well informed and as perceptive as anything we might hope for today. One consideration must be that the United States Leather Company founders, living adjacent to each other in New York did not have the same need to think things through and put pen to paper, nor the opportunity for regular long journeys across the Atlantic interfacing with a wide variety of people and consequently did not have, and did not think they needed, the same requirement to analyse their relationships in front of their colleagues.

Connectedness impacts on the level of freedom a company has in defining its supply network and its other relationships (Bocconcelli and Tunisini, 2009, p24, Blankenberg and Johannson, 1992). In its first 60 years Booths had a great deal of flexibility although it had many relationships, but in its final years this flexibility had diminished greatly as the company looked at a much narrower network horizon: a network with fewer relationships.

This latter contrasts with the findings of Ford et. al. (2003) that identifies the substantial variety and dynamism in the substance and the structure as characteristic of networks. (Bocconcelli and Tunisini, 2009)

In Figure 12 some of the major areas of the development of Booths in terms of the Three Paradoxes are laid out. In many instances there is quite a fine line in some of the outcomes. A company's options are both created and constrained by its resources, its future moves are made possible by its previous actions but also constrained by them and the more tightly it tries to manage things which are not it's to manage the more problems are created.

PARADOX 1:	
A COMPANY'S RELATIONSHIPS ARE THE BASIS OF ITS OPERATIONS AND DEVELOPMENT.	**BUT** **THESE RELATIONSHIPS MAY ALSO TIE IT TO ITS CURRENT WAYS OF OPERATING AND RESTRICT ITS ABILITY TO CHANGE.**
The partners built many relationships in diverse fields which allowed them to move effectively into network positions in their chosen areas	Some of the relationships limited the options for the business at start up: the choice of the leather industry and the ports in Brazil for the shipping
Their international, merchant house, and financial relationships extended their leather network well beyond the norms for the leather	As they moved more into tanning and selling finished leather, others began to fill the network space in raw hide trading as the Booth links

industry in the US or the UK. This enabled them to identify and exploit new opportunities	weakened
Over the sixty years their partners saw them increasingly as tanners and less as traders	Once interdependencies had been established with Kent it would have been hard for them not to buy the company on his death
PARADOX 2:	
A COMPANY'S RELATIONSHIPS ARE THE OUTCOME OF ITS OWN DECISIONS AND ACTIONS.	**BUT** **THE COMPANY ITSELF IS EQUALLY THE OUTCOME OF ITS RELATIONSHIPS AND WHAT HAS HAPPENED WITHIN THEM.**
They had a coherent approach to developing strong relationships even before trading, creating a sound base for quick development when they started.	The tannery involvement in Gloversville came as a result of a customer failing, so they had a choice of investment or a big loss.
Their relationship with tannery chemists came as a result of the decision to invest in tanning in Gloversville.	Their ultimate network position within the British Empire meant that they were unable to spot, or respond to, changes in the wider network.
The decision to exploit the new technologies lead it to build new relationships for international raw material collecting and for worldwide customers.	These relationships led to the company regarding itself as primarily tanners rather than an international leather group.
Having succeeded with Dongola and created the possibility for Schultz to invent chrome tanning they were recognised as a company to talk to about all new developments	They stimulated Schultz to invent chrome tanning and then had to react to it creating competition for Dongola leather
PARADOX 3:	
COMPANIES TRY TO MANAGE THEIR RELATIONSHIPS AND CONTROL THE NETWORK THAT SURROUNDS THEM TO ACHIEVE THEIR OWN AIMS.	**BUT** **THE MORE THAT A COMPANY ACHIEVES THIS AMBITION OF CONTROL, THE LESS EFFECTIVE AND INNOVATIVE THE NETWORK WILL BE.**
Booths never tried to control the network at first and it was hard to separate owned actors and independent assets with whom they had strong relations.	In the 20th century Booths felt ownership of tanneries equalled success and the trading businesses were allowed to decline in importance and voice.
The approach in the early years was one of great flexibility, with a focus on innovation, and preparation	As the 20th century progressed Booths were increasingly preoccupied with maintaining their existing tannery network.
Their success in chromium tanning came from a positive decision not to control the technology	Booths struggled to build a position in the Italian and Asian networks which developed strongly in

developed in their own tannery, but to exploit it when others had perfected what they had started	the 1960s and 1970s because these were outside "their" network.
They associated themselves with new technology and sponsored it in the early years without trying to own it. They saw more value in having a network position to exploit new technologies than having ownership of those technologies	For the first 75 years they were closely involved in all leading leather industry technical developments, while in their latter 50 years when they owned all the tanneries no meaningful developments came from the Booth Group. They became more interested in ownership of technology in the 20th century rather than in its exploitation

Figure 13: Booths and the 3 Paradoxes

We have identified the value of weak ties, the value of "randomness" and the benefits to be gained from looking at the big picture before rushing into detail. Equally it has been clear that the Booths were able to catalyse great innovations and profit greatly from them without tight ownership of all the intellectual property. Yet when they did try to manage with a tighter rein on factories and ideas their ability to adapt to the times was diminished.

6.5 Conclusions

When looking at both the way the Booths networked evolved and that of the United States Leather Company the importance of thoroughly understanding the context in which they working is clear (Araujo and Easton, 2012). Both companies reacted in according to their assessment of their relationships and potential for improving their business position through network interaction.

Booths chose, throughout this period, to maintain and further develop many relationships in their key markets and to use these to help them build more links into other countries to support the business development. The Booth approach greatly aided innovation and they found themselves having moved from basic importers to tanners

benefiting hugely from the greatest advances in leather technology for thousands of years.

7.0 Conclusions

7.1 Introduction

This section looks at the conclusions to be drawn from this dissertation, the implications for both the academic and the practitioner and the practitioner, the limitations of the research, and the possibilities for future work in the area.

Longitudinal studies made of networks using relatively short time spans has meant that can be difficult to see the overall picture as it develops. Looking at network evolution in this way is always likely to create some problems in not being able to truly identify outcomes and the beginning and end of periods of purposeful networking. Looking instead at a very long period allows the use of all the main tools available for analysing and looking at networks and an opportunity to identify and associate the networking process with the outcomes. It is particularly useful when looking at innovation which can involve many years with periods of intense activity interspersed with periods of little or no activity and the utilisation of knowledge from a wide range of sources.

7.2 Conclusions

This dissertation has used historical records to examine the evolution of a single company within a changing network. This case illustrates clearly that networks are neither recent inventions, nor indeed inventions at all. The case also illustrates that many supposedly modern phenomena such as rapid technological change and intense competition, “globalization”, network position, networking and the associated Network Paradoxes may in fact be intrinsic to the nature of business.

The case also illustrates the role of the different aspects of networking in business practice and in Booth's evolution (Ford et. al. 2003). Thus Booths provides clear examples of the First Aspect of Networking; working within existing relationships. Key questions for both companies in a dyadic relationship concern which elements of the relationship to seek to change or *confront* and with which to *conform*. The case also shows clear examples of the Second Aspect involving choices for Booths between attempting to *create* a new network position for itself or *consolidate* its existing position. It is clear that there was a pronounced difference in the company's approach to this during the nineteenth century, when it was constantly creating and recreating its position as opposed to its consolidation in the latter years of the study which at least in this instance was to prove disastrous. The case also illustrates the company's choices in the Third Aspect of Networking. These choices are between when to attempt to *coerce* others based on the company's views and when to c*oncede* to their knowledge or competence. Booth operated with a clear view of the network and its approach to it and sought to direct others to its own ends. But it was also prepared to follow the initiatives of others based on their expertise. However during the later stages of the company, its network position and the absence of relationships with innovative actors in the network, combined with the extent of its control over "its" part of that network meant that it was dependent on its own skills alone and was unable to take advantage of those of others. This illustrates strongly the value of trying to deduce the network pictures of various actors as the basis of their networking.

The case also illustrates some of the apparent ingredients for success and for failure for companies operating in complex networks irrespective of their historical location. In the establishment of their new business five characteristics stand out:

1. The Booths planned well in advance and were conscious of the importance of relationships as a basis for building business and of the time and resources needed to develop them. They built these relationships before they actually started to trade in their own right. They had many strong actor bonds capable of further development and worked well *within* those relationships. How they perceived these relationships is an important part of the decisions they subsequently made (Ford et. al., 2003, Henneberg et. al. 2006, Ramos, et. al. 2005).

2. They chose to develop a network position with a pattern of relationships that was both broad and dense, (Waluszeski, 2004) giving them the capability to observe potential opportunities and threats. They saw network position in evolutionary terms, but acknowledged that the evolution of the network and of their own position within it was not wholly within their control. They successfully balanced coercion based on their own skills and network picture against conceding to the knowledge of others.

3. They maintained a high level of flexibility in their relationships and accepted and provoked changes readily. This appeared at time to be very random, but if randomness is viewed as a strategy it is effective in terms of managing within networks.

4. They did not try and own the technologies they helped to create but rather worked to ensure they had the relationships in place to see what was happening, to influence the process and to exploit it, with both suppliers and customers. This has been described as networking to combine resources.

5. Unlike the vegetable tanners of the US, they didn't have a limited network horizon. A restricted network picture may not be problematic in some circumstances, but would have limited the company's ability to spot important trends and innovations.

However, just as political careers are all said to end in ultimate failure, so the Booth success story came to an end. The ultimate decline of the company illustrates clearly the obverse of its earlier success. It attempted to control that portion of the network that it saw as its "own" whether for geographical, cultural or historical reasons. This meant that it neither had nor was able to develop the new relationships that were necessary to capitalize on changing circumstances or the actions of others, in line with the third network paradox (Håkansson and Ford 2002). It was just like its earlier, localised competitors who were unable to see what was happening because of the narrowness of their relationship structure. Even though it had an apparently global spread, its network position meant that it was myopic to change, with fatal results.

This dissertation also illustrates a number of network features of innovation. What is conventionally referred to as innovation might be classed as a subset of the general process of network evolution that is marked by some combination of radical shifts in individual resources, resource combination or activity structure. Also, innovation is always likely to involve major change in particular actors, in their network pictures and in the relationships between them. Innovation is an interactive process and as such it involves combinations of new and existing resources and activities that stretch widely across the network. These resources and activities and the processes of change are outside the complete control of any one actor. The dissertation

illustrates that innovation is both a temporal process and one that encompasses many sequential and parallel strands.

The success of an innovation, like any outcome of business networking is specific to time and to the position in network space from which it is viewed. But success always seems to be based on combining ideas from a number of sources with a curious blending of old and new concepts. This process of combination is both random and uncontrolled but can be strongly affected by the linking and encouragement of others that was part of the Booth culture.

The direction which an innovation takes is often quite different from the initial objectives of the actors involved in it. The leathers that Booths helped to develop all had success in quite different applications than their developers had planned. It is also clear from a number of studies (Lundgren, 1995; Håkansson and Waluszewski, 2002) that an innovation may take decades before its value is recognised or exploited. Chrome tanning was typical of this with a number of failed attempts to commercialise it before Schultz and those in the decade following worked it into a commercial success.

The case study also demonstrates how companies can effectively network with multiple counterparts to widen their access to activities and resources and influence the direction of innovation. It also shows how changes in resource ties and activity links change the overall topography of the network in ways that a single actor cannot anticipate. Perhaps the genius of the Booth Company was in their appreciation of the dynamics of business networks, their understanding of their own limitations, their ability to scan across apparently discrete networks, to build relationships and to develop and combine the resources and activities of others.

The concept of re-examining company records, when more than just the basic company reports are available, is shown here to be a valuable tool to observe companies over long periods of time.

Examination of the episodes via the areas of subjective interpretation, relativity, jointness and interdependence proved useful. When Ford and Mouzas (2008) look at episodes and scale it is clear that decisions about interaction are heavily weighted by experiences in previous episodes and the relativity, jointness and interdependence they interpret from these prior episodes. This is clearly the case with the Booth Co. Done in this way the findings are likely to be transferable to other network evolutions in different sectors and times.

The subjective interpretation that was gained from the Booth partners letters highlight the role played by what might be termed managed randomness, of controlled networking to obtain access to resources and of carefully managed dyadic relationships that built long term trust.

The letters we have analysed both directly and indirectly evidence the difficulty of drawing network pictures in two dimensions as highlighted in the extremely variable examples shown by Henneberg (2006). The highly descriptive letters give much more of a feeling of three dimensions, of an understanding that shipping, leather and finance might appear separate but in the Booths' mind were overlapping areas which came together relatively seamlessly and where they would be able to utilise resources and knowledge in one are for the benefit of another.

In particular the dissertation has highlighted the importance of non-transactional relationships in terms of keeping thinking fresh and being prepared to move to capitalise on changes in wider environment. In the period studied Booths managed major technical changes,

changes in currency and the gold standard, long term recession in the US and big changes in customer needs in the US.

The Booths had a huge number of relationships and at any one point of time many, if not most of these, were non transactional. Sometimes contact was maintained by luncheons in the different cities they travelled to or by correspondence. Many were personal to the partners or most senior managers. Yet they clearly viewed all these as important relationships which would give them access to resources that they might need in the future. Many were the doors the George Booth was to find so easy to open when he started in the business.

In the generational change George was introduced as an actor into the network and soon built up his own specific relationships. He did have over fifteen years of working with his father while his father was mostly involved in his social science activities in London. Action was taken to ensure that he did not try and hold too many connections by limiting to the leather side of the business but given that he added a Directorship of the Bank of England, involvement in the unit trusts and so many active roles in Brazil his life was just as complicated as his father's had been.

When Booth and Co was small they only had partners' letters but as they grew they separated the correspondence into high level partners' letters and everyday office correspondence. The partners' letters continued to cover business matters but also more general bigger picture issues related to the gold standard, legislation, political developments and incidental meetings with important individuals. In some respects this may be taken as expertise in routine macro-environmental analysis and an ability to keep the business in context.

A final comment would be that during the late 1970s the leather company renamed Booth International struggled to identify a policy to

deal with the global restructuring in the leather industry. The work of John Booth in the 1950s and 1960s was to develop the business into the Commonwealth areas of East Africa, New Zealand and Nigeria. Given the success of the company with the USA at an early stage of its development and with Brazil there was logic to this approach.

Yet the work in the Commonwealth involved a lot more central control from the UK than was the case in the 19th century. By tightening its control on its activities the group diminished the external links it needed to be able to transition into the geographies, technologies and economics that were then developing in the global leather industries. It found itself without the position or resources to keep up with the changes. So while managing geography was part of the success of Booths in the early years it appears to have became a weakness in the final ones.

7.3 Limitations of the study

Although this research did have access to a very large amount of primary and secondary data related to the Booth Company and the key individuals involved there are two areas where it could now be improved. The major one is the discovery of largely un-indexed boxes of material at the University of Liverpool which were, due to building reconstruction, not fully accessible for this research project. Secondly on-line access to national and regional newspapers in the USA has been quite dramatically increasing over the last three years and now makes possible the discovery of highly pertinent and detailed material about the industry, the companies and the individuals involved.

Both these sources now offer considerable improvement in fully understanding the views of key actors in the leather network and of the context within which the network existed.

7.4 Implications of the Study

This dissertation demonstrates that there is value in examining networks over time and that the insights gained do help to understand the processes individuals and companies undertake to stabilise and improve their business performance in ever changing business environments. The process of assessing where a business stands in relationship with others with whom it is transacting and with others who, even without direct transactions, have the power to influence events around it is identified as very valuable. The tools of analysing both network outcomes and purposeful networking are useful for this purpose.

The dissertation also aids with understanding the dynamics of the networking process as a company tries to improve its position. Purposeful networking is of great relevance when innovation is concerned as are the gains to be obtained from what might be called the serendipitous outcomes arising from an open structure and watchful activity, as opposed to a tightly managed set up.

The usefulness of a given resource entirely depends on how it is combined with other resources at any given point in time and it is how the companies interact that will change the value of a given resource (Ford et.al., 2009) and move that resource geographically or technologically. The networking approaches of "randomness" and "combining resources" are helpful in understanding the processes involved.

The dissertation also highlights the value of the rich material available from the correspondence of the period which allows for an understanding of how actors viewed their networks, other actors in those networks and the many external influences upon them.

For those in business a network picture with a limited horizon might be manageable for some situations. However, if a company is considering the longer term a wide network picture and the maintenance of many relationships would appear to be essential. In a world of fast communications and increasing globalisation, both of which were characteristics of the period studied, this is even more likely to be the case. The concepts of "randomness as a strategy", "networking to combine resources" and maintaining a flexible structure to be able to quickly adapt to changes would appear to be of great value, particularly if the business works in a sector where innovation is important.

7.5 Directions for future research

Further studies of the United States Leather Company would permit analysis in greater depth of how the Three Paradoxes truly impacted upon that business over the 20 years before the merge plus the following 30 years. The research carried out to date makes it clear that an outcome for the United States Leather Company from the Third Paradox of Networking was that the company became too tightly bound to move away from its vegetable, heavy leather routes into new leathers. These would have allowed it to avoid following the demand for leathers for horse transport and footwear soling into steady decline as the 20th century progressed.

Such in depth study of the United States Leather Company with access to additional sources in the USA and newly accessible press material would allow an assessment of whether this was in fact the whole picture or whether additional matters impacted upon their ability to innovate and adjust their network position.

With regard to the Booths the implication from this research is that in the period after 1920 until the company's final decline in 1979 was characterised by moving steadily to a tighter, less responsive, structure that was not able to deal with new emerging competitors in Asia, while at the same time the traditional empire locations in which they had become involved fell into decline. While there can be some confidence in this conclusion there are likely to be additional elements which need to be interpreted within this period. The sale of the shipping business after war time depletions can be understood but the splitting up of the other two parts of the company into standalone leather and building businesses is not clearly explained. Indeed it has been identified that the unique overlap of shipping, trading and leather making allowed the company to maintain their broad and dense network with the potential for many innovative overlaps.

Equally although the leather side did show consolidation back to the UK and into tannery ownership it held on to many relationships in all parts of the world. Understanding why it could not use these to network effectively in order to reposition itself to match what the Italian leather industry did in the period from 1960-1990 would offer some invaluable network insights.

It was not just Booths whose leather business declined. From 1960 until 1990 both the UK and the USA saw unprecedented closures in the tanning and leather using industries while at the same time Italian tanners stabilised or grew somewhat. This has never been fully explained. During this period Italian tanners are accepted by the industry as having shown excellent skills of innovation in product, process and marketing.

In recent times a lot has been made of the high cost in owning "legacy" properties such as the copper cable owned by BT on the grounds that this makes companies inflexible. The final outcome for Booths appears

to support this in that they were left with aging factories in the UK and the US which proved to be the wrong locations for the way the industry was developing. Other questions might be asked that have not been answered in this dissertation.

Did the company become too diverse for loose management? After adding ports and railways activities in Brazil, the banking and Unit Trust activities of George and the construction business was the diversity so great that splitting up became inevitable. When the company did start to split up was it correct for it to separate into its individual components so that each element had to stand alone in the second half of the 20th century?

These questions have not been fully covered in this dissertation and must await further examination.

7.6 Concluding Observations

The dissertation looked at the value of using a network analysis to analyse long term business evolution, providing insights into how the networks evolve. The dissertation also contributes to understanding the value of networks as managerial processes, while filling a gap in the literature in the study of long term outcomes in networks.

Some lessons are able to be taken from this work and can be summarized.

1. Implications for working within networks in terms of the process of purposeful networking and its association with how actors build pictures of the network based on experiences from previous episodes. Concepts such as randomness and openness have been detailed.
2. Choices for companies between creating new networks or consolidating existing ones.

3. Choices related to using the company's strengths to force a conclusion or concede to the wisdom of other actors.
4. The value of maintaining many flexible relationships.
5. The benefits from constantly looking at the wider picture in network terms.
6. The value of understanding the dynamics of networks when it comes to innovation.

The IMP network approach has shown itself well suited to long term analysis of business evolution with great value where product or process innovation is concerned.

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8.1 Journals and archives

London University London School of Economics Library holds papers relating to Life and Labour dating from (1886-1903) and correspondence relating to the Royal Economic Society (1893-1899)

London University Library holds correspondence and papers dating from 1870-1916. The Charles Booth Online Archive contains details of the archive collections from LSE and London University Library collections at: http://booth.lse.ac.uk/ This includes all the copies of the family magazine "Colony" produced from 1866 to 1871

Trade Magazines:

Shoe and Leather Reporter

Hides Trades Review

Leather and Hides Trades Review

World Leather

Leather International

(These 5 trade magazines above, some of which go back to 1875, are available in the University Library at the University of Northampton)

Booth News and Views, About 20 of the bulletins were produced by the company in the late 1940s and in the 1950s. This dissertation has had access to 12 of them which are in private hands. It is anticipated that one copy of these will be gifted to the Museum of Leathercraft Library within the next five years.

The National Archive holds extensive records of the Booth Steamship Company in the Liverpool Record Office with an online index: http://www.nationalarchives.gov.uk/a2a/records.aspx?cat=138-387boo&cid=0#0

The University of Liverpool Library have established a special section (http://sca.lib.liv.ac.uk/collections/colldescs/booth.html) related mostly to the social work of Charles Booth with papers from 1887-1903. The library, along with the Liverpool Record office, holds large amounts of other papers related to the business which include 75 boxes of the 1863-1935 correspondence with New York office.

9.0 Appendices: The Booth Group

9.1 Timeline

The main events in 150 years

19th century	Booth family moved to Liverpool from Warrington	Liverpool was a fast growing city with lots of overseas trade
1812-1815	Napoleonic War of 1812	After the war Commodity prices fell and stayed low for a long time
1820-1940	Unitarian Society became very important in the UK	
1837	Grand Junction Railway completed	London, Birmingham, Manchester and Liverpool linked together by train
1847	Friedrich Knapp first published his ideas on chromium	In the *Textbook of Chemical Technology*
1850	Alfred apprenticed to Lamport and Holt, well known Liverpool merchant house	
1850s		Liverpool merchants began to replace sailing ships with small steam ones
1857	Alfred Booth went to New York	Worked for Liverpool merchants Rathbone & Co
1858	Friedrich Knapp published details of the tanning effect of chromium	The German Chemist published his treatise *On the Nature and Essential Character of the Tanning Process and of Leather*
1859	*Origin of the Species*	Darwin's quietly spoken but influential book was published. Charles interpreted this to mean that man must accept responsibility for the mess made of the world (Norman-Butler)
1859-1862		Bad harvests in UK lead to food imports

		from US through to 65
1860	Elder Mr Charles Booth died	
1860	Partnership set up with Mr Walden: Walden and Booth	57 Broad Street, New York
1860-62	Charles Booth travels in Turkey and Europe	Had finished his apprenticeship. After this trip he joined his brother in New York at time Walden became ill
1861-1865	US Civil War	
1863	Walden becomes unwell and enters mental hospital In January	New Booth partnership formed, shipping light leather to US. Two products: Sumac tanned sheep from Bermondsey for shoe uppers, and pickled grains and fleshes from Turneys of Trent Bridge, Boots of Leicester, and Johnston at Bootle
1863	Issue of confederate loan	
1863	Open office in Liverpool	5 India Buildings
1864	Decided to enter the steamship business	Plan to sail to North Brazil ports, Ceara, Maranham, Para (now called Fortaleza, Sao Luiz, and Belem): return cargoes would be cotton, sugar and coffee
1865	Booth US trade had a good year	
1865	Turneys agreed to ship to US on consignment	
1865	Contracts placed for first 2 Booth ships, Augustine launched	
1865	Charles Booth campaigned unsuccessfully for the Liberal parliamentary candidate in the election of 1865	
1866	Feb 15th first Augustine voyage to Brazil	Voyage lost GBP3 but obtained 10k annual contract for mail from the Brazilians
1867	Brazil/Paraguay War ends	
1867	Alfred Booth married Lydia Butler	After his marriage he returned to the UK
1867	Thomas Fletcher joined as partner	Appears to have worked in New York. Cousin and close friend of the brothers. Trained as an engineer before joining Booth & Co
1860-1890	US population doubled	
1869-1871	Alfred Booth stayed in the US	Last prolonged stay
1869		In 1869 R. Singlehurst & Co. Ltd., of Liverpool who had traded sailing ships for many years to northern Brazil, founded the Red Cross Line. This was in direct competition to Alfred Booth & Co., but in

		1870 agreement was reached to share the trade. A fortnightly service being instigated
1869	Charles Herbert Wade joins Shaw's Tannery in Grantham, UK (predecessor of Bjorlows)	He was 13 years old but soon moved to Edward Turney & Co at Whitemoor Leather Works, which in 1901 was to become Wades.
1870	Franco-Prussian war breaks out	
1870	The Honourable Henry Romilly joined as partner	Son of first Lord Romilly and grandson of Sir Samuel Romilly. His sister married Henry, second son of Mr Justice Crompton and first cousin of Alfred and Charles Booth. Spent the 70s in the USA, financial side of business, who was unwell much of the time and not hugely active.
1870	Office opened in Boston to build on success of Roan business (pickled foreign sheepskins)	141 Purchase Street, Boston. Mr Gaenslen went to be manager
1871	Charles married Mary Macaulay	On 29 April 1871 Booth married Mary Macaulay, daughter of Charles Zachary Macaulay and Mary Potter, and niece of the historian Thomas Babington Macaulay.
1872	Free hides in the US	Tariff on imported raw material into the US removed
1873-1879	The Long Depression in the USA	Thousands of businesses close in the US. Also occurred in Europe. Some consider the depression continued until 1896 (The Great Depression)
1873	Charles goes with family to Bex in Switzerland	Due to ill health he takes a break from work. Decided to live on 5% of his savings per annum until able to work James Kuttner starts work in New York for Booths on a temporary job
1875	Charles returns to UK in the summer, although not yet in full health	
1876	Charles takes his wife on 3 month trip to Brazil to test new pressurised engine	One of few trips he makes with his wife; his health recovers considerably during this trip
1875/76	Break with Liverpool for Charles. He was unhappy about the family's traditional Unitarianism and their contentment with Liverpool	Decides to set up home and office in London to manage Booth trading. Causes major family rift and break with Philip Holt
1877	Office opened in London to deal with French and Belgian sheep suppliers	Fenchurch Street: or perhaps 84 King William Street
1875-80	Without fail he wrote a weekly letter to Alfred on the	

	state of the business	
1877	Kent and Stevens tannery in Gloversville hit by Stevens fraud. Booths were owed $70,000. Booths pay off creditors and back James Kent. A mortgage on the building was held by James Kuttner and his wife on behalf of Booth and Co	James Kent is the leather scientist who developed fatliquoring and the Dongola tannage. Worked with his assistant Joe Hunt (who later became superintendent) James Kent described as one of the "outstanding pioneers of the American Leather Industry: both innovations forming part of a long search for a method of producing cheap kid leather to replace the expensive products imported from France and used in the Gloversville glove trade" John, 1959 p 50
1878	Charles again in the USA	Reorganised the business with Kent tannery now included. Spent three months a year in the US for many years
1879	Problem of unsold stocks of roans lead to opening of separate showroom in New York	Frankfurt Street
1879	Dongola tannage successful and Booths began buying dried goat and kangaroo skins for it	Did not work for gloves but excellent for footwear Booths took a share in the Kent business and James Kuttner moved to Gloversville to supervise the commercial side
1879	Liverpool offices moved	From 5 India Buildings to 14 Castle Street
1879	Charles Booth bought two sailing ships the *Bessie Dodd* and the *Carrie Dodd*	To take gunpowder and other bulk cargo to Pará and return direct to London with rubber and nuts
1880	New-York to Pará direct service introduced by Booth Line	
1880	Booths picnic in Gloversville begin in Sacandaga Park, sometimes leasing several railroad cars for its employees and families	In the Park they quickly became the highlight of the summer season. Open to all citizens of Johnstown, Gloversville and surrounding communities they drew exceptionally large crowds. (1891 over 5000 people) from Larner, Paul, Our Railroad: The History of the Fonda, Johnstown & Gloversville Railroad 2009
1880	Launch of Daisy Kid	Ceara goat tanned with Dongola Tannage to make an imitation kid
1880	Booths buy Dodge factory next to Booth and Kent	Paid $30,000 to be able to expand the Gloversville tannery and use Dongola on dried raw including kangaroo
1880	Charles becomes senior partner	Charles becomes senior partner at the request of Alfred. Tom Fletcher's letters say "Alfred is a silent indecisive person"
1880-1884	Augustus Schultz worked with Julius Kuttner in Booth	

	Gloversville on perfecting chrome tanning	
1881	Booth Steamship Co Ltd formally incorporated,	Capital of £200,000 in £10 shares. £81500 issued in first instance largely to existing partners in original four ships and to friends.
1881	Charles trip to Bordeaux	Looking for quality sheepskins
1882	Nuneaton Leather Co founded	Booths needed to make something out of the roans. Charles Wade left Whitemoor and set up the small tannery at Nuneaton for Charles Booth. A Mr Johnson owned 50% and Booths 50%. Mr Johnson supplies sheepskins and Nuneaton Leather split them sending the grains, salted to the US and splits were sold for chamois production in the UK. The plan was to make heavy grains better suited for the New York market sold as ABC.
1882		Charles Booth elected President of the Royal Statistical Society (82-84) and awarded their Guy Medal
1884	Augustus Schultz had two chrome tanning patents issued	He sold these for $25000 and they were eventually sold to Patent Tanning Co of Philadelphia. Schultz went on to develop patents for central heating. See technical timeline
1885	Charles began The Enquiry He wrote the Life and Labour of the People of London between 1886 and 1903	Had one clerk put into the Mansion House but otherwise this work was done in Alfred Booth offices until moving into its own premises in 1888
1886	James C Kent died on June 6th aged about 55 leaving a widow and two children	Of malaria contracted during a visit to St Augustine in Florida. He died at his summer home in Ocean Grove, New Jersey said in his NYT obituary to be worth about $1m. He was named as a member of - Booth & Kent of London - Kent & Booth of Gloversville - Kent & Co of New York Booth & Co became outright owners of the Gloversville tannery
1886	Henry Romilly, a partner, dies	He had become unwell in about 1883 and returned to the UK
1887	Alfred Booth retired	Although he remained in touch for many years
1887	Mr Miller employed in Sydney to buy kangaroo	In conjunction with Richard Young and Co
1889	Schultz' two chrome patents passed to Franco-American company Messrs Blumenthal	Blumenthal then passed patents to Marcus Beebe and R.Foederer & Co in Philadelphia apparently via the Patent Tanning Co. of Philadelphia.

1889		*Life and Labour of the People* published
1889	Robert H. Foederer began making "Vici" kid with chrome tannage	Backed financially by Abe Steen of New York and Marcus Beebe of Boston Getting the fatliquor right appears to have been key
1890	Booths opened office in Australia to source kangaroos as well as sheep	Run by Frank Millar and later helped by William Cunningham
1891	Richard Patswosky of New York produced "Bonafide" Kid for Booths	Thought to be a chrome product used by Booth to replace Dongola glazed kid
1891		*Labour and Life of the People* was published
1892-1894	Booth started to market their Brazilian goatskins chrome tanned and finished in Philadelphia by tanner J.P.Mathieu	Called Surpass it was a chrome tanned black glazed kid. In 1894 Booths gave up Bonafide kid
1892	J.P.Mathieu bought land in Allegheny Avenue, Philadelphia for a new tannery	
1893	Martin Dennis patented single bath chrome tanning	An attempt to circumvent the Schultz/Booth patents
1893	1893 "bastard boom" of great demand but shortage of skin supply	Led to Mr Miller in Australia buying sheepskins as well as wallaby an kangaroo
1894-97	Four years of depression in America	High unemployment, war with Spain, issues related to tariffs and currency
1894	Booth Gloversville tannery started chrome tanning for goat and kangaroo	Charles Wade made first trip to US to understand selling arrangements
1896	Daily output at J.P.Mathieu rose to 600-700 doz	
1896	Partner Thomas Fletcher dies	George went to USA (New York and Boston) shared cabin with Cecil Baring of Baring Bank
1896	Professor Procter tours US	Observed the new chrome tanning
1897	CB published nine volumes between 1892 and 1897	*Life and Labour of the People in London*
1897	New partnership agreement for Alfred Booth and Co	Charles makes new partnership agreement with his nephew
1898	Daily output at J.P.Mathieu rose to 1000-1200 doz	
1898	Introduction of enamel process by George S Wolff to copy patent leather	Sold by Booths as "Ideal"
1898		George goes to US with his father Charles, after giving up at Trinity, Cambridge and in

		1899 starts a Clerk in London Office
1899		Charles Booth made a Fellow of the Royal Society
1899	Charles Booth published "Old Age Pensions and the Aged Poor – A Proposal"	In which he advocated 7 shillings per week, available from the Post Office, for all those over seventy years old.
1899	Office in Christchurch, New Zealand	George makes round the world trip during which he opens office in New Zealand and catches dysentery in India
1900	Surpass tannery, built in 1892, burnt down	Allegheny Avenue site was rebuilt as a modern factory for large production of chrome tanned kid
1901/1902	Julius Kuttner died on 8th October. George sailed out on 30th October and took charge of US for two years	The younger Booths began to take over: George Macaulay Booth (24), Alfred Allen Booth, Enfield Fletcher. No Booth partner lived in New York from 1883 to 1901.
1901		Charles Booth starts work on Harbour concept for Manáos Charles Booth portrait painted by G.F.Watts (now in National Portrait Gallery)
1901		.In 1901 the Singlehurst family decided to withdraw from operating their own fleet. The two companies amalgamated under the name of The Booth Steamship Co. (1901) Ltd. From the amalgamation of the Booth Iquitos Steamship Co, Ltd. and the Red Cross Iquitos Steamship Co, Ltd. was born The Iquitos Steamship Co. Ltd. In 1911 The Iquitos Steamship Company was absorbed into the main Booth fleet.
1901	Charles Wade and Co founded in Nottingham	Joint venture buys Whitemoor Leather Works in Nottingham where Edward Turney had gone bankrupt. Initial capital was Wade £2000 and Booths £5000 with an arrangement that any profit coming to Charles would be put back into the business until the capital was equal
1902	Booth & Co Gloversville stopped making glove leather and transferred to shoe leather only	From McMartin book on Gloversville
1902	George hires CWJ (Sir Clement Jones)	Sailed to London in July "I wanted to get one or two Englishmen out to join me"
1903	Manáos Harbour Limited established	Charles travels to Manáos to see the new harbour on the Obidense
1903	Daily output at J.P.Mathieu rose to 1500 doz	Thought to be the largest kid skin tannery in the world at that time
1903	August Charles and Mary made 3 week visit to New	September Cousin Alfred came to New York, and asked to stay a year. So in

	York	January 1904 George returned to UK
1904	Charles Booth made a Privy Councillor Charles Booth given honorary D.Sc. at Oxford	By Prime Minister Balfour on June 24th On June 22nd
1904	Booths buy into Surpass forming Surpass Leather Company as a JV with Mathieu from Jan 1 2005	Charles Booth went to US for extended trip with many trips from NY to Philadelphia; took John Crompton who had been working on raw material in China and other places since 1902
1904	Booths supported building Wolff Process Leather Company	In Summerdale near Philadelphia. The process was not too successful and subsequently discontinued
		"When the Surpass tannery was running kangaroo, they regularly consumed about 150 to 200 dozen per day- everything that was available from Booth Australia, which was centred in Sydney, with agents in Brisbane, Rockingham, Adelaide and Freemantle. I believe that for many years, starting at the very beginning of the 20th century, Booth was the dominant collector of kangaroo skins and therefore had a very large influence on prices." KC elder
1905-6	Charles Booth had major breakdown in health	This was his second breakdown and now required him to spend much of his time at his home in Leicestershire, Gracedieu Manor, and hand more of the business to the second generation George spent most of 1905 in the USA but returned finally to UK in January 1906 leaving US to be managed by Paul Crompton, Clement Jones and Franklyn Kirkbride
1906	George marries Margaret (Margy) Meinertzhagen	Sets up home at 48 Great Cumberland Street (near family home (Cumbersome) at 24). Marries Margy 6th October and goes on 5 months honeymoon to Italy, Egypt, Jerusalem and other places in the Middle East
1907	Booths buy out the Mathieus' share in Surpass	From Jan 1 Paul Crompton took over from Mathieu as VP and GM or Surpass
1907	Over supply in kid market led Booths to off load Surpass stock	Caused upset in Philadelphia with other tanners but seems to have worked well – defined as "healthy readjustment" with all tanners back on full production shortly after
1908		Universal Old Age Pension introduced in the UK
1908	George and Margy sail to	Looked at Pacific route from Iquitos and

	Brazil to understand the shipping business	implications of the booming rubber trade from Manáos Got caught up in a revolution in Peru. Declined offer to manage all harbours on Peruvian coast. Sailed back via Panama, Jamaica and New York (on Lusitania) Material from Margy's diaries and George's lecture used by Virginia Woolf in *The Voyage Out* (Crow, p55)
1908	Will Rothenstein paints portraits of both Charles and Mary Booth	
1909	Post Office Pays our first pensions on 1st January	The part played by Charles Booth in drawing the attention of Parliament to the plight of the poor and for his persistence in fighting for the passing of the "Old Age Pensions Bill", was acknowledged in the House of Commons, in November 1909, when an illuminated address was presented to him in the House.
1909	Alfred Booth made Chairman of Cunard, October 1909	Alfred's brother Charles was Chairman of the Booth Steamship but also went on Board of Midland Railway where he became Chairman. So from1908/9 George was effectively left to run the whole business
1910	By this time Booths offices in London were the Headquarters in 11 Adelphi Terrace and with an office in Railway Approach, London Bridge that looked after export of hides and skins	Up to 1910 they had used No 8 Adelphi Terrace which had been Head office of the Manáos Harbour Limited. In 1903 a passenger office was opened for the Booth Line
1912	Early in 1912 Charles Booth handed over the chairmanship of Alfred Booth and Company to his nephew Charles	But still sailed to Brazil that year with his son George. In 1915 returned fully to work under wartime exigencies despite growing evidence of heart disease
1912	George Booth commissions new house in Campden Hill	The New House was built in Airlie Gardens at the top of Campden Hill. Architect was his cousin Harry Fletcher. The house opened in June 1914 and they sold it to South Africa in 1928 as a residence for their Ambassador. The New House was frequently used to entertain Cabinet Ministers, Prime Ministers and Hoover before he became President of the USA along with infinite literary and musical figures
1914	The partnership moves into a	June 1914, Alfred Booth and Company

	private limited company	Limited was formed with a share capital of £1m in ordinary shares of £1
1914	Alfred Booth dies November 2nd at age of 80	Son Charles was Chairman of the Booth Steamship Company and the other Alfred Allen Booth was Chairman of the Cunard Steamship Company. One of his four daughters married Prof Godfrey Lloyd of Toronto.
1915	George Booth spent five months working unpaid at the foreign office trying to sort out military supply situation	
1915	Booth and Company becomes a legal entity under US law	Held interests in Gardiner-Lucas Candy and Glue Company and the Densten Felt and Hair Company
1915	In May Lusitania is sunk Mr and Mrs Paul Crompton and their 6 children plus their nurse, travelling first class all perished. Ship carrying accoutrements for army, put on manifest by Booths as sheepskins.	Carried armaments classed in the manifest as sheepskin. Mr. Paul Crompton was an Englishman returning home to England. He was the Vice President of Surpass Leather Company at St. Martin's and Hartwell Lanes. Mr. Crompton was described as a partner in the firm of Alfred Booth and Company and a director of the Booth Steamship Company. The bodies of Stephen, John and Peter were recovered later. All 6 children, their parents and nurse died. NY Times
1915	Despite heart problems Charles Booth returned to work "under war exigencies"	From LSE on line archives
1915	George Booth invited to be a Director of the Bank of England	
1916	**Charles Booth** died on 23rd November, 1916	On 23 November 1916 he died following a stroke, at his country home of Gracedieu in Thringstone, Leicestershire.
1917	GMB travels to the US	Buys J.G.White (Brazilian tram/train/power companies plus Latin American trading)
1919	The various US holdings were put into a trust	The Battery Company
1919	Booths bought The Unit Construction Company	from Crittalls
1919	In January letter from Winston Churchill to George	Ended War work for George Booth and thanked him "personally for the service you have rendered especially in the connection with the organisation of the original Supply Departments of the Ministry, when you were Deputy Director General of Munitions

		Supply and subsequently as Adviser to the Ministry on Allies Requirements." (Crow p 161)
1920	Jasper Bentley helped open up the big goatskin market in Nigeria	
1920	Walter Kidde and Company engineers	Erected a $1.5m plant in Gloversville for Surpass Leather Company.
1921	Booths buy Pavlova Leather, Abingdon	Having bought a share in 1917
1924	Gloversville shuts	Temporarily
1926	George Booth buys The Lodge, Funtington	A village5 miles from Chichester
1927	US head office moves to Philadelphia	
1929	Sale of J.G.White back to Mr White	
1929	Gloversville reopens Booths sell part of Abingdon site for the building of the MG car factory	Felmongering stops in Abingdon as they concentrate on gloving and chamois/skiver production
1931	GMB in the US	Buys J.G.White back for nothing with idea for Unit Trusts in mind
1931	GMB sets up M&G Trust with William Burton Balding	First ever Unit Trusts 23rd April at 31/9d a unit. J.G.White and Co was put in
1937	US Battery Company wound up and US assets put back to direct relation to parent company in UK	Consequence of changes in US tax law
1938	Gloversville closed, after serious strike	September 28, 1938, Wednesday "A decision to close the Gloversville tannery of the Surpass Leather Company permanently was announced today by Harold Connett, President. In revealing that the closing order would be effective Oct. 5, Mr. Connett said the company would transfer its operations to its Philadelphia plant because it could "no longer afford to divide its production between two tanneries."
1939	Mary Booth died	In Gracedieu Cottage of the Booth country home Gracedieu Manor in Thringstone Leicester. The Manor was taken over by the Prep School of Radcliffe College
1940s	Booths began to get involved in bovine production	- as dealer in East Africa - via purchase of Melrose - manufacture of bovine at Wades

		- manufacture of bovine at Surpass - the production at Bulleys of Kip, Side and Sole Leather
1942	Gloversville buildings sold	
1946	Charles Tanneries founded	Charles Wade, Charles Booth, Charles Wade jnr. Everyone involved called Charles, hence Charles tannery. UK sales had been via Kohnstamm which Charles Tanneries replaced.
1946	Lord Vestey buys shipping	The Booth Steamship Line consisted of a fleet of steamers plying between Liverpool and Manáos (1,000 miles up the Amazon river). A number of these vessels were lost during World War II, and rather than try to rebuild with the reparations, Booth sold to Vestey. The story is that George Booth (Chairman) met Lord Vestey for lunch. The latter asked what George felt the Line was worth. The reply was "oh, a million pounds". "Alright" said Vestey, they shook hands, and that was that. KC senior
1946	Surpass tanning 1800 doz skins per day	"When I joined the Booth Group in 1946, Surpass was regularly tanning a total of 1,800 dozen skins a day, employing about 1,000 men. Skin supplies came from their own exclusive agents in Brazil, Argentina, China, India (which included today's Pakistan) and Nigeria" KC senior
1948	Melrose Tanners Ltd bought	"A heavy leather tannery at Beverley which has enlarged its sole leather production and plans to make motor-car upholstery hides" Company Newsletter 1956
		The Surpass tannery was closed in the 1950s and contract tanning at other peoples' facilities was tried for a time, until operations were ceased in the mid 1960s. -KC senior
		In the 1950's, Booth established an extensive skin gathering organization in Kenya, Uganda, and Tanganyika; they took over a tannery in Thika, Kenya, and managed one in Kano, Nigeria, and one in New Zealand in the 50's and 60's. KC senior
1950s	OFRO (Booths African Rawstock procurement arm) formed)	Paddy O'Flynn & John Rozemulder (Dutch) combined in East Africa
1954	Last input at Surpass	Watched by some of the original employees from 1900, when the new factory had been

		rebuilt after a fire
1956	Charles Wade retires as Chairman of Wades (Nottingham) Ltd at the age of 73	Replaced by John S.M. Booth. Booth's bought Wades' 50% of the business at the request of the family. Charles Wade died shortly after
Late 50's	Tombooth formed around this time	Booths & Dutch Twentsche Overzee Handel Maatshappij . (Hide & skin sector of Phillips)
Late 40s'	Bulleys Tanneries Ltd (Thika & Kahawa factories)	Thika Built during1944/5 with Italian POW labour .TomBooth bought? Mr Poulson Snr was Manager from Sept 1948 until 1962
	New Zealand Light Leather	
	Great Northern Tannery	
1962	Appears to have been family struggle over control of business	John Sebastian Booth was briefly replaced by John Wales Booth
1963	About this year the leather and building side split	Booth International formed with JSM Booth in charge and Alfred Booth separated as a building business
1964	Ken Chapman Snr moved from Philadelphia to Boston	With the close of the Surpass business the main Booth activity was importing NZ sheep to the Boston area
1964	Booth Family Split	John SM Booth forms Booth International and his cousins stay with the construction business Alfred Booth and Co
1967-68	Jim Jackman takes over as technical director from Mr Simon	Booth International Directors were JSM Booth, Mr Simon/Mr Jackman and David Donald who later had a period at K Shoes
1971	Booths acquire 100% of Turney Bros	
1973 (circa)	Ulster Leather & Atlantic Tanning bought from UCT ltd	Joseph Dub de Dubski, ex UCT joins Bulleys in 73/4 for short contract.
1972/3	ET Holden ltd (Jedburgh)	Sheepskin & latterly Pigskin tannery, then w/blue for Pavlova
1974	Booth International becomes a public company	During the 1970s the HQ is moved to Turney Bros Trent Bridge Leather Works
1980	Wades closed	
1981	Garnar-Scotblair buys Booths	Became Garnar-Booth, to the disgust of the newly acquired Scotblair units.
1981	Turney Bros closed	
1986	Melrose closed	
1987	Hitchin closed	
1987	Pittards bought Garnar-Booth	Became Pittard-Garnar (for a short while), thus Booths title in trade lost
	Booth Overseas closed	
1988	Atlantic Tanning closed	
1993	Pavlova Leather closed	

1995	Ken Chapman goes independent with Booth Inc in Boston	Main St, Peabody, Mass
2002	Kinghorn closes	

9.2 The Booths and the Booth Men

Alfred Booth (founder) JP 1834-1914

Rt Hon Charles Booth (founder) 1840-1916 Privy Councillor, Social pioneer, and catalyst for the introduction of the Universal Retirement Pension introduced in the UK in 1908
President of the Royal Statistical Society.
Fellow of the Royal Society.
Doctor of Science --- Cambridge University.
DCL (Honorary Doctorate, Civil Law) --- Oxford University.
LLD (Honorary Doctorate of Law) --- Liverpool University.

Charles Booth (Elder) father of Charles and Alfred Booth Founders 1799-1860

JSM Booth 1913-1994 MD Booth International 1964-1980 Grandson of Charles and son of George Booth (GMB)

Charles Booth Junior, eldest son of Alfred became partner in 1895 focused on shipping

Alfred Allen Booth (Sir Alfred Allen Booth, 1st Bt...) Younger brother of Charles Jnr of 46 Ullet Road, Liverpool. joined company in 1895 focused on shipping

George Macaulay Booth GMB second son of Charles, joined in 1895. Focused at first on leather. Father of JSMB. Director of the Bank of England, Deputy Director-General of Munitions Supply during First World War. Founder of M&G Trusts

Dr Henry Booth Born 1901 son of Charles Booth jr (who became a director of Midland railway in 1898) Great Great nephew of Henry Booth (1789-1869) who was a partner with Stephenson in the development of the rocket steam engine. Chemist, worked in leather trade for 50 years in factories in Abingdon. Retired 1977 and wrote biography of Henry Booth on the steam engine.

David Allcock Technical, Wades & Holdens

Richard Amis CBE last Chairman of Alfred Booth & Co on whose watch the company was sold in 1986, Grandson of Sir Alfred Booth 1st Bart

John Barlow (Dr) original 60s/70s R&D, John went to the US with Rohm and Haas and then returned to Pittards in the UK

John Bartle Suede technician, Melrose

Charles Becker	had charge of sales of shoe leather from both Gloversville and Philadelphia in 1894. Worked out of New York sorting office
Rowan Bell	Kahawa Tannery manager circa 70s then went to NZ
Ron Bennett	Director Pavlova, Wades from 1952 until 1971 then Turneys before Wades
John Burstow	Ulster Leather/ATCo
David Boyce	(Accountant – Melrose, Pavlova, Kinswood)
David Bolle	Pavlova Sales
Arthur Baxter	(ran Booth & Co London Ltd with CJG in 1910
Horace Bradley,	traffic manager of the Booth Line, retired 1945 after nearly forty-four years service in the New York office of the company. He joined the predecessor organization, Booth Co., steamship agents and leather merchants, on May 4, 1901, and remained through two reorganizations.
Dick Biggwither	Supremo Booth & Co (England) Ltd
Paul Bloodworth	Peripatetic Accountant – 1966-1994 Melrose Bulleys Holdens ATCo/ULCo Turneys Scotblair Pittards Booth & Co (England) & partially Booth (Boston), Roorda BV
Tony Boucher	Last Manager Booth & Co (England) Ltd. Died 2010 in Chichester
W.C.Burton	Sailed with George Booth to US in 1917 to join the New York office (An American living in London as joint MD of JG White & Co which had set up the trams in Manáos and Para)
W.J. Cannon	Cannons of Lincoln. W.J. Cannon was there in 1915 and advised George Booth on war supplies
Paul Chapman	Finished at Pavlova
David Church	Penultimate accountant Turneys.
Frank Critchley	(Accountant/Secretary Wades 60s & 70s)
K Chapman Snr	Booth (Boston) Ltd but started in Philadelphia in the 1940s
Ken Chapman Jnr	Booth Boston plus Turneys. Owns Booth and Co Inc, One of two remaining companies (2011) retaining the Booth name
A.N.Connett	Sailed to US to join Booth New York with George in 1917. An American and with Burton was joint MD of J.G.White & Co.
Harold Connett	Surpass Leather was Chairman of Tanners Council of America 1942
Benajamin Crimp	Brazil
J.Clissold	Brazil
Paul Crompton	Worked first for the Booths in China then ran USA and died with his family on the Lusitania
David Crompton	USA. Became head of Booth interests in the US when C.W.Jones returned to Liverpool as a Director of Booth Steamship Company in 1910. Brother of Paul
John Coggins (Dr)	Original Booths R&D
William Cunningham	In 1890 joined Sydney Office. Cunningham moved to Gloversville in 1898 and later took over the pickled sheepskin department in New York.

Ken Delves	Booth International Director, Managing Director Pavlova. Born in Southwell, Notts
David Donald	(Group FD mid 60's to 1981)
David (Mac) McDowell	(Melrose & ET Holdens)
Dieter Demenco	(Turneys for a spell 1978)
Joseph Dub (de Dubski)	Slovakian – major player UCT Ltd
Kevin Feenan	Sales manager ATCo & ULCo
Alec Finch	Melrose MD, Director Booth International. then Pavlova; had job of closing many Booth and Garnar plants
Thomas Fletcher	Partner, managed New York, started 1867. Died in 1904
Enfield Fletcher	son of Thomas
Tom Fletcher	son of Thomas
Richard French	Last accountant Booth Overseas?
Alan Game	Worked at Russells, Pavlova and at J&T Beavens at Holt. Died in 2010
Clement Gardiner	Booth Man in US around 1917
CJ Garland	One of the "Garland Brothers" in Liverpool 19th cent. Died 1904
Chris Glaysher	Tombooth
AE Gaenslen (NY)	opened Boston office and subsequently became partner in Alfred Booth and Co
Captain Good	Booth Line master used as technical adviser for the Iquitos harbour works
Charles Good	Brazil
Mike Green	Booth & co (England) ltd
Robin Grossert	Accountant/Secretary Tombooth/Bulleys
Jim Hillman	Long time Pavlova accountant, before David Boyce
F.G. Heise	Liverpool 1890s
Gustav Richard Heise	Died 1896, worked with Alfred Booth and Co for 27 years.
Kurt Herschfeldt	(original Atlantic Tanning boss)
Jack Husselby	Long time Wades Gen. Mgr & Technical person (went to BLC on closure of Wades)
Jim Jackman	Wade Technician who became head of Booths R&D after Mr Simon in 1968
Joe Jackson	works engineer Pavlova
C.W. Jones	Sir Clement Jones. Hired by George Booth in July 1902 to help in the USA. Remained a great friend of Booths until he died 29th October 1963. "No choice could have been more fortunate for me in those first years in America when friction between factories and the young Englishman representing the absentee English owner would have been fatal". Crow (p40)
James Kent	Gloversville tanner invented Dongola tanning and the foundations of modern fatliquoring 1830-1885
Tadeus Kieniowicz	Last Accountant Wade & Co

Julius Kuttner	US manager who ran Kent tannery in Gloversville after Booths bought it and set up to develop Chrome Tanning. Died 1901
Bill (William) King	(Bulleys technical – Canadian ex Kenya Hide Improvement commission)
Franklyn B. Kirkbride	Appointed manager of American interests in August, 1905 (he was succeeded by Paul Crompton and Clement.W.Jones) All three made a strong team in the USA when George left in January 1906
Cyril Ladegourdie	Chief Engineer Bulleys Tanneries
Ralph Liddyard	Works Manager Pavlova
F.Lingebach	(NY)
James J. Lyons	February 12, 1890 – January 7, 1966 New York, American Democratic politician who served as Borough President of the Bronx (1934-1962). 1903 he worked as office boy in Surpass Leather and later as salesman. Quoted as saying he had sold enough leather to cover 4 million pairs of women's feet.
Leo Macdonough	(Group Accountant, then MD at Atlantic Tanning Co/ULC, then Pavlova)
Sir Peter Meinertzhagen	Managing Director Alfred Booth and Co 1946-57
Ernie Mills	Group Accountant & manager of Pavlova from 1969
FE Miller	Australia 1890s. Frank Miller established the office close to the current Sydney Opera House
J.P.Mathieu	Philadelphia tanner who worked with Booth to develop Surpass
Slavik Moucka	(Chief Technician UCT/ULC)
AE Mould	Liverpool 1890s
Len North	One time Group Accountant?
Trevor Norris	Technical Director Turney Bros in the 1970s
Paddy O'Flynn	Formed OFRO. Quote JSMB "Our F***ing Rawstock Organisation"- Booth Overseas & Tombooth
Mike Parsons	Pavlova, then ET Holdens – later BLC CEO and Scottish Group
Mr Poulter Snr	Joined group from Pittards in 1948 and worked in Kenya. Bulleys having spent time in Wades, Pavlova and Melrose (which had just been bought). He worked there until the company split in 1962
Ron Poulter Jnr	Studied at Leeds in 1961-65 with a grant from Booths and then worked at Pavlova 1965-1971, then Turneys until 1973 before leaving to join Eastern Counties, then Hodgsons in 1977. From 2006 in New Zealand.
Robert Parsons	JSMB introduction – Cuero Garments ltd, Ex`Captain retired from the army
Pete Paterno	American engineer at Turneys
Beatrice Potter	Beatrice Potter (Webb) Cousin-in law of Charles and Mary Booth and worked with Charles on the "Book". Very much influenced by her friendship with the family

William Purcell	Brazil 1890s
Mr Robilliard	Booth manager in Manáos 1908
J Rotton	Production, Pavlova Bulleys. Production Director Turneys. Grandson of GMB
John Rozemulder	OFRO & Tombooth
Augustus Schultz	Born in Germany .....Obtained his chrome patents in 1884 and then went on to work on inventions in central heating
Mr Simon	Headed Booth R&D before Jim Jackman
Selby Smith	New Zealand based Booth England
Bill (William) Stewart	Director, Nottingham Tanneries Managing Director of Wades, Turneys and Charles Tanneries
Paul Stribbling	Group Co Sec at time of "Going Public" and to 1979
C.H.Skinner	USA 1890s
Henry Sheppard	Chief engineer Pavlova 1969 to closure. Did a lot of group work
T.B.Southgate	Brazil
Harold Tregoning	Engineer in charge of harbour works in Iquitos, which Booths were constructing. A friend from Harrow of George so they had major reunion in 1908
Marcel Verwiel	(Bulleys boss, then Pavlova & Atlantic Tanning)
Charles Wade	Came from Grantham (Bjorlows) to the Nuneaton plant and then in 1901 bought Whitemoor Leather Works with Booth help to set up Wade and Co1856-1924. Highly respected by Booths as a technician and tannery manager
Max Wade	Charles Tanneries Sales – Original Wade family
Weston Wade	As Max Wade above.
John R Webb	Liverpool 1890s
Marcel Werviel	Took over Bulleys after Mr Poulter
Peter Wilcox	Original Booths 60s/70s R&D
George S Wolff	German origin Philadelphian who developed enamel finish to copy patent. Booth had JV with him, but not very successful

Yagnesh Kumar Zala [Babu!](technician – Bulleys/R&D/Pavlova)

The first group of "Booth Men" were defined in the 1880s and 1890s when Charles Booth moved to his system of less involved management.

Turney Brothers only

Sir Arthur William Black	28 February 1863 – 13 July 1947[1] was an English lace manufacturer from Nottingham and a Liberal Party politician who served in local government in Nottingham before holding

	a seat in the House of Commons from 1906 to 1918. He was a director of Turney Brothers
Charles J. Pain, F.C.A.	Vice-Chairman in 1927
Sir Arthur W. Black	director 1927
John A. E. Turney	director 1927
Douglas J. Law	director 1927

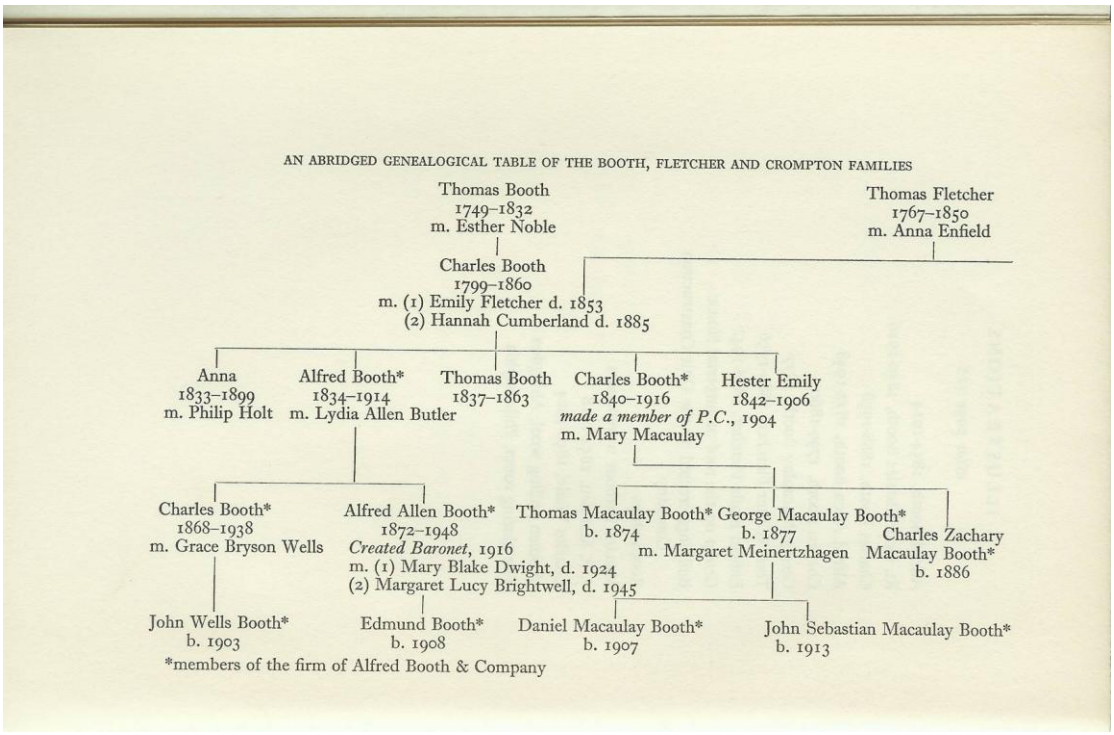


Figure 14: Booth Family Tree - from John (1957)

9.3 Brands

ABC	Heavy sheep grains made in Nuneaton Leather Company for the New York market	1882
Bonafide	glazed kid made for Booth by Richard Patsowsky of NY: a crude chrome tannage, based on Shultz patents	1891-93
Daisy Kid	Ceara goat with Dongola Tannage to make an imitation kid	1880
Dongola	Tannage invented by James Kent very good for kid and kangaroo, although later adapted for all leathers	1877
Elite Glace	Kid leather from Wades	1947
Ideal	Enamelled leather to look like Patent (by Wolff)	1898
Eureka		
Surpass	A chrome tanned black glazed kid (on Ceara goat and others)	1894
Ajmal Camel	A chrome tanned East African or Bactrian aniline printed camel skin – Melrose, circa 1966	

Ngombe	As above but on East African bovine crust	1975?
Cordovan	High glazed horse butt shells for American golf shoes. Melrose Tannery	1950s
Drysoft	Hi Tech chamois (really a Pittards brand)	1990s
Locarno Calf	Turney Bros	1926
Trent Bridge Willow Calf	Turney bros high class calf	1918 on
Meltan	Sole leather from Melrose tanners	1950s on
Oasis kid	Popular bookbinding leather made by Odell Wilson and Tilt until closure in 1992	

9.4 Companies

Alfred Booth & Co
Charles Booth & Co
Surpass Leather Co (1904 50% from 1908 100%)
Booth and Kent (from 1878 100%)
Kent and Booth
Booth and Kent and Company, Gloversville. "A large leather mill operation on Washburn and Grand Streets, across from Kent Street. (from Decker, 1998, Gloversville) On the site in Gloversville a Plaque was put up, dated 1920 which calls it Surpass Leather Company, founded 1870. It is not clear why the 1870 date was chosen nor when the Gloversville factory was renamed Surpass.
Booth and Co, Inc
Booth & Co formed in 1901 to manage the tug and barge operations on the River Amazon
Melrose Tanners 100% purchased in 1948
The Pavlova Leather Company
The Boniface Sheepskin Company
Turney Brothers 100% from 1971
Charles Tanneries Set up in 1946 To sell Wades production and named Charles as key members of both Wade and Booth families called Charles
Nuneaton Wool Co possibly this is the same as the leather Co.
Nuneaton Leather Co (Booth 50% Johnson 50%)
Wade and Co (50% Booth 50% Wade although at start up Booths had the majority. Booth bought 100% on the death of Charles Wade in 1956)
Atlantic Tanning
New Zealand Light Leather (10% Booth and 90% NZ fellmongers) later sold to Gomshall. Important source of crust for Pavlova from 1970
OFRO
Bulleys Tanneries Ltd (Thika & Kahawa factories)
Tombooth
Booth & Co (England)
Booth Overseas
Booth & Co (International)

Densten Felt & Hair Co, USA (bought around 1910)
Gardiner-Lucas Glue & Gelatine Corporation USA (bought around 1910)
B.Cannon & Co Ltd, Lincoln (acquired pre WWI, glue and gelatine; but there was some fellmongering or leather making done in Lincoln also, which was closed in 1917 when Alfred Booth bought into the Pavlova leather syndicate)
The Booth Steamship Co. Set up 1881 and reformed in 1901 on the purchase of Red Cross Iquitos Steamship.
The Unit Construction Company acquired 1919 from Crittalls
In 1964 after a family split the leather business was established separately as **Booth and Company (International) Ltd.** It became a public company in 1974 and was sold to **Garnar-Scotblair** in 1981 forming **Garnar-Booth**. John Sebastian Macaulay Booth was the Managing Director during this period. He was the grandson of Charles Booth who died on 23rd November 1916
Booth Mechanical services. Originally part of Alfred Booth Group. Continues to supply plumbing and heating services in the west of England, Based in Liverpool.
J.G.White and Co (purchases twice in 1917 and 1931 and formed the basis of the foundation of the unit Trust concept)

9.5 Books and publications by Charles Booth

1889	Life and Labour of the People Vol 1.
1891	Life and Labour of the People Vol 2.
1892	Pauperism: a Picture. Endowment of Old Age: an Argument.
1892/7	Life and Labour of the People in London, 1--9 Vols.
1894	The Aged Poor in England and Wales: Condition.
1899	Old Aged Pensions and the Aged Poor: a Proposal.
1901	Improved Means of Locomotion as a First Step towards the Cure for the Housing Difficulties of London.
1902/3	Life and Labour of the People in London, 1--17 Vols.
1910	Poor Law Reform. Reform of the Poor Law by the Adaptation of the Existing Poor Law Areas, and Their Administration.
1911	Comments on Proposals for the Reform of the Poor Laws.
1913	Industrial Unrest and Trade Union Policy.

9.6 Booth Shipping Routes (incomplete)

Figure 15: Booth Line funnel and poster

- 1866-1986 Liverpool - Oporto - Lisbon - Brazil.
- 1867-1881 (summer only) Hamburg - Antwerp - Havre - Lisbon - Brazil.
- 1881-1964 Liverpool - Para (direct, passengers)
- 1881-1964 Hamburg - Antwerp - Havre - Lisbon - Brazil.
- 1881-1964 Manáos - Para - Galveston - New York.
- 1881-1885 London - Para (sail)

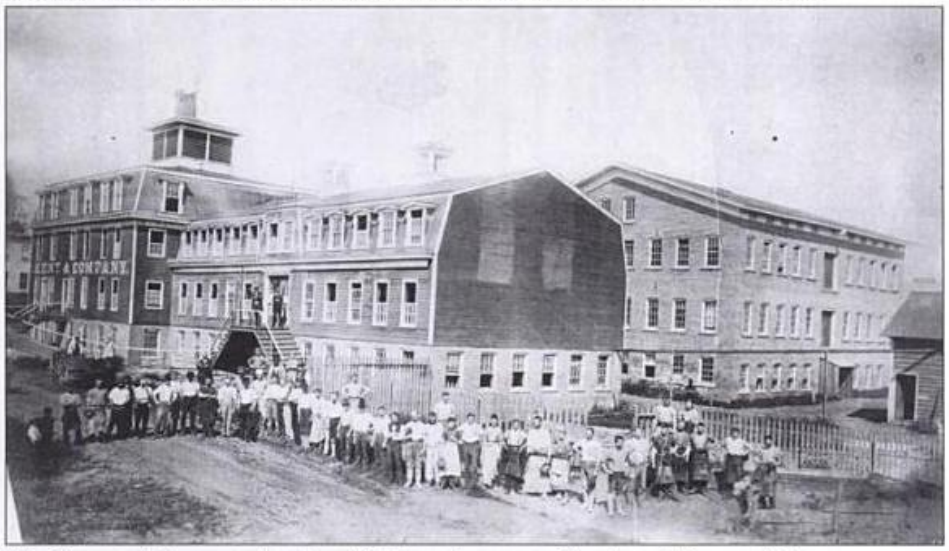
9.7 Norcross 1901

Booth & Co

This firm are among the largest and richest in the business. They import skins from Brazil and other points, and manufacture at Gloversville and Philadelphia. No house has done more for the trade than Booth & Co. They have introduced the dongola and the patent kid tannage, and have been active in protecting the interests of the trade in tariff litigation. Norcross (1901, p 208)

9.8 The Booth factory in Gloversville

Leather workers engage in the processing of leather. Leather processing went through a number of stages. The dried, raw hides were first soaked in vats, and were then shaved, dyed and colored, bucktailed, split, measured, and graded. They then went from wet room to dry room until the leather was ready to be used in fine gloves, leather accessories, and shoes.



The Kent and Company Leather Mill, later known as Booth and Kent and Company, was a large leather mill operation on Washburn and Grand Streets, across from Kent Street. It used to close its doors on special occasions and holidays, sometimes leasing several railroad cars for its employees to go to Sacandaga Park with their families.

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(from Gloversville by Lewis Decker, 1998 Arcadia Publishing)

9.9 Acknowledgements

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